Sherwood NEWCASTLE

R-765

A/V RECEIVER

DOLBY DIGITAL · EX PRO LOGIC II

dts ES NEO:6 ™

Introduction

READ THIS BEFORE OPERATING YOUR UNIT

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING : **TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

Note to CATV System Installer :
This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as pracitcal.

FCC INFORMATION

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFCATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution : Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

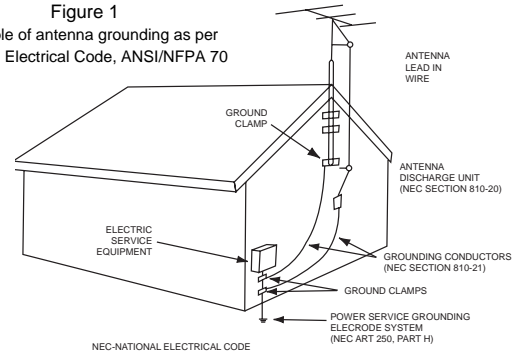| FOR YOUR SAFETY		
U.S.A CANADA	120 V	Units shipped to the U.S.A and Canada are designed for operation on 120 V AC only. Safety precaution with use of a polarized AC plug. However, some products may be supplied with a nonpolarized plug. CAUTION : To prevent electric shock, match wide blade of plug to wide slot, fully insert. ATTENTION : Pour éviter chocs électriques, introduire la lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqu' au fond.

SAFETY INSTRUCTIONS

1. **Read Instructions** - All the safety and operating instructions should be read before the product is operated.
2. **Retain instructions** - The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** - All warnings on the product and in the operating instructions should be adhered to.
4. **Follow Insturctions** - All operating and use instuctions should be followed.
5. **Cleaning** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. **Attachments** - Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. **Water and Moisture** - Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement, or near a swimming pool; and the like.
8. **Accessories** - Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's insturctions, and should use a mounting accessory recommended by the manufacturer.
9. A product and cart combinaion should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
10. **Ventilation** - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's intructions have been adhered to.

PORTABLE CART WARNING

11. **Power Sources** - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For porducts intended to operate from battery power, or other sources, refer to the operating instructions.
12. **Grounding or Polarization** - This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replae your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
Alternate Warnings - This product is equipped with a three-wire grounding-type plug, a plug having a third(grounding) pin. This plug will only fit into a grounding-type power outlet. this is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the gronding-type plug.
13. **Power-Cord Protection** - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particlar attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
14. **Outdoor Antenna Grounding** - If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit,

connection to grounding electrodes, and requirements for the grounding electrode. See Figure 1.

Figure 1
Example of antenna grounding as per
National Electrical Code, ANSI/NFPA 70

ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECODE SYSTEM (NEC ART 250, PART H)
NEC-NATIONAL ELECTRICAL CODE

15. **Lightning** - For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
16. **Power Lines** - An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
17. **Overloading** - Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
18. **Object and Liquid Entry** - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
19. **Servicing** - Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
20. **Damage Requiring Service** - Unplug this product form the wall outlet and refer servicing to qualified service personnel under the following conditions:
    a) When the power-supply cord or plug is damaged,
    b) If liquid has been spilled, or objects have fallen into the product,
    c) If the product has been exposed to rain or water,
    d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
    e) If the product has been dropped or damaged in any way, and
    f) When the product exhibits a distinct change in performance - this indicates a need for service.
21. **Replacement Parts** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
22. **Safety Check** - Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
23. **Wall or Ceiling Mounting** - The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
24. **Heat** - The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

CONTENTS

System Connections

- Do not plug the AC input cord into the wall AC outlet until all connections are completed.
- Be sure to observe the color coding when connecting audio and video cords.
- Make connections firmly and correctly. If not, it can cause loss of sound, noise or damage to the receiver.
- If the electricity fails or the AC input cord is left unplugged for more than 2 weeks, the memorized contents will be cleared. Should this happen, memorize them again.
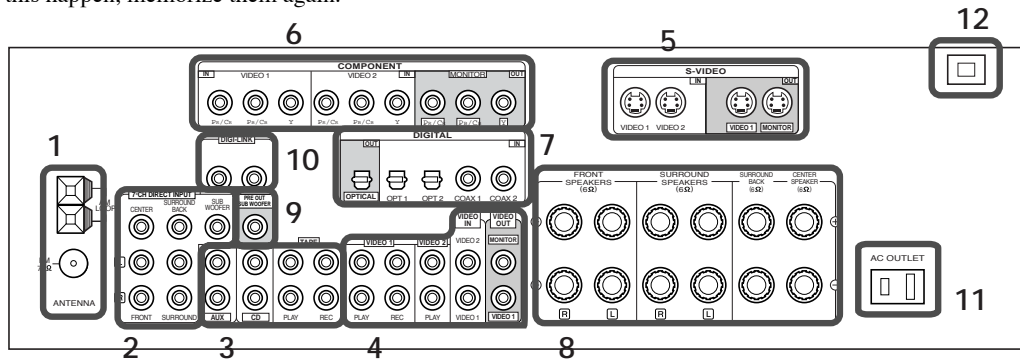
1. CONNECTING ANTENNAs
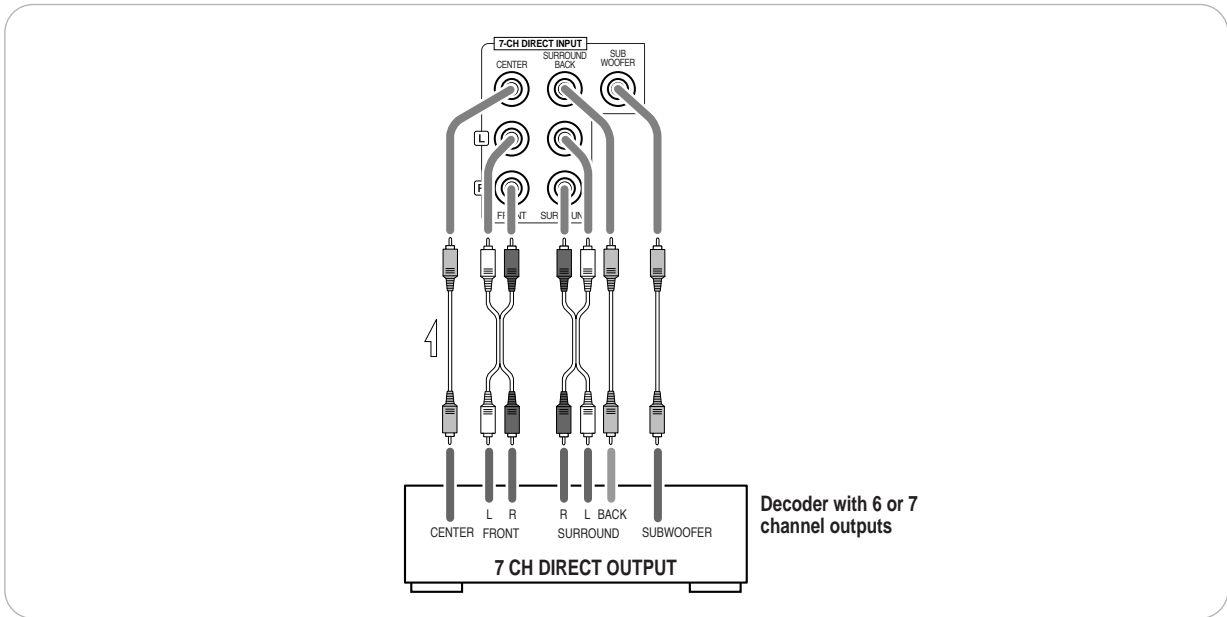

FM Indoor Antenna

FM Outdoor Antenna

· Change the position of the FM indoor antenna until you get the best reception of your favorite FM stations.

· A 75Ω outdoor FM antenna may be used to further improve the reception. Disconnect the indoor antenna before replacing it with the outdoor one.

AM Loop Antenna

AM Outdoor Antenna

· Place the AM loop antenna as far as possible from the receiver, TV set, speaker cords and the AC input cord and set it to a direction for the best reception.
· If the reception is poor with the AM loop antenna, an AM outdoor antenna can be used in place of the AM loop antenna.
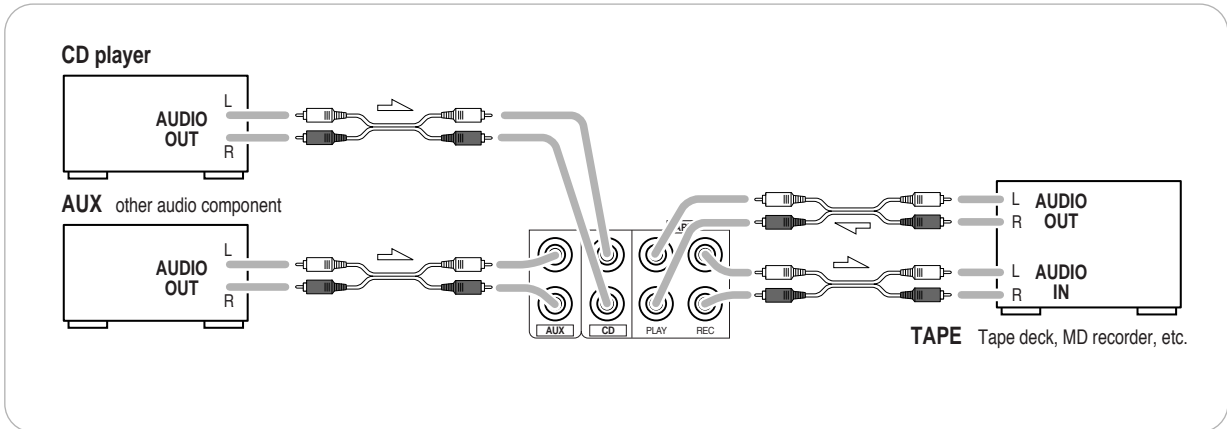
5

2. CONNECTING 7 CH DIRECT INPUTS

・ Use these jacks to connect the corresponding analog outputs of a DVD player or external decoder, etc. that has 6 or 7 channel outputs.
・ In case of 6 channel outputs, do not connect this SURROUND BACK input to your audio component.
  (For details, refer to the operating instructions of the component to be connected.)
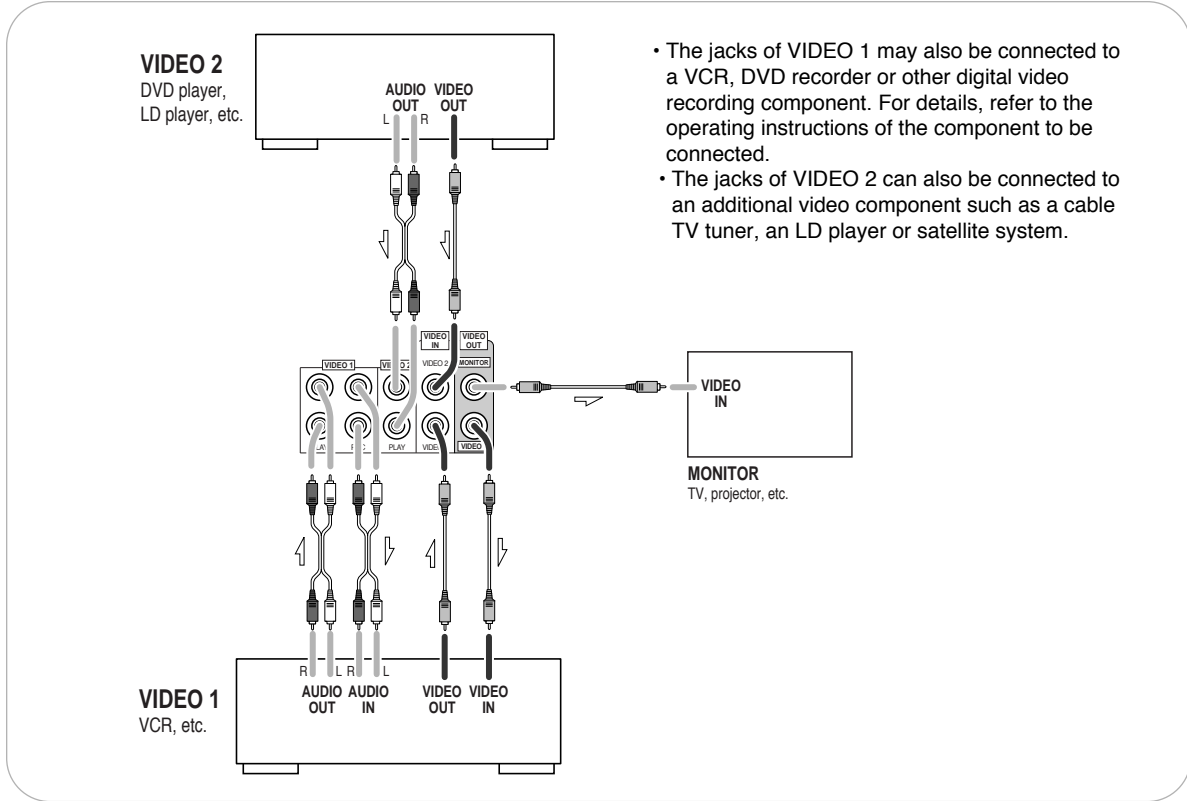

7-CH DIRECT INPUT
CENTER SURROUND BACK SUB WOOFER
L
R
FRONT SUR UN

7 CH DIRECT OUTPUT
CENTER   L R   R L BACK   SUBWOOFER
         FRONT   SURROUND

Decoder with 6 or 7 channel outputs

3. CONNECTING AUDIO COMPONENTS

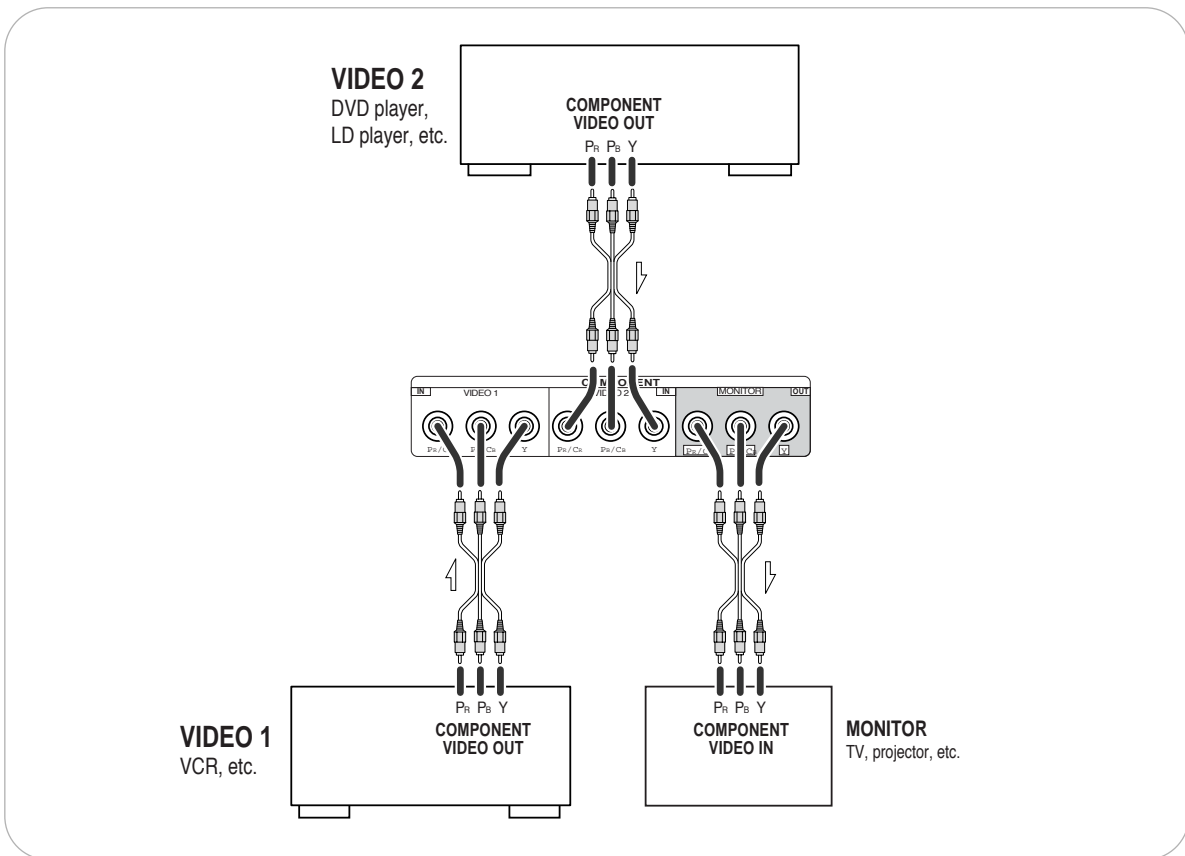・ The AUX jacks may be connected to an additional audio component such as a CD player, a tape deck, etc.

CD player
AUDIO OUT   L   R

AUX   other audio component
AUDIO OUT   L   R

AUX   CD   PLAY   REC

L AUDIO
R OUT

L AUDIO
R IN

TAPE   Tape deck, MD recorder, etc.

4. CONNECTING VIDEO COMPONENTS

VIDEO 2
DVD player,
LD player, etc.

AUDIO VIDEO
OUT OUT
L R

· The jacks of VIDEO 1 may also be connected to
a VCR, DVD recorder or other digital video
recording component. For details, refer to the
operating instructions of the component to be
connected.
· The jacks of VIDEO 2 can also be connected to
an additional video component such as a cable
TV tuner, an LD player or satellite system.

VIDEO VIDEO
IN OUT

VIDEO 1 VIDEO 2 VIDEO 2 MONITOR

VIDEO
IN

PLAY PLAY VIDEO VIDEO

MONITOR
TV, projector, etc.

R L R L

VIDEO 1
VCR, etc.

AUDIO AUDIO VIDEO VIDEO
OUT IN OUT IN

5. CONNECTING VIDEO COMPONENTS equipped with S-VIDEO jacks

VIDEO 2
DVD player,
LD player, etc.

S-VIDEO
OUT

S-VIDEO
IN OUT

VIDEO 1 VIDEO 2 VIDEO 1 MONITOR

S-VIDEO
IN

MONITOR
TV, projector, etc.

VIDEO 1
VCR, etc.

S-VIDEO S-VIDEO
OUT IN
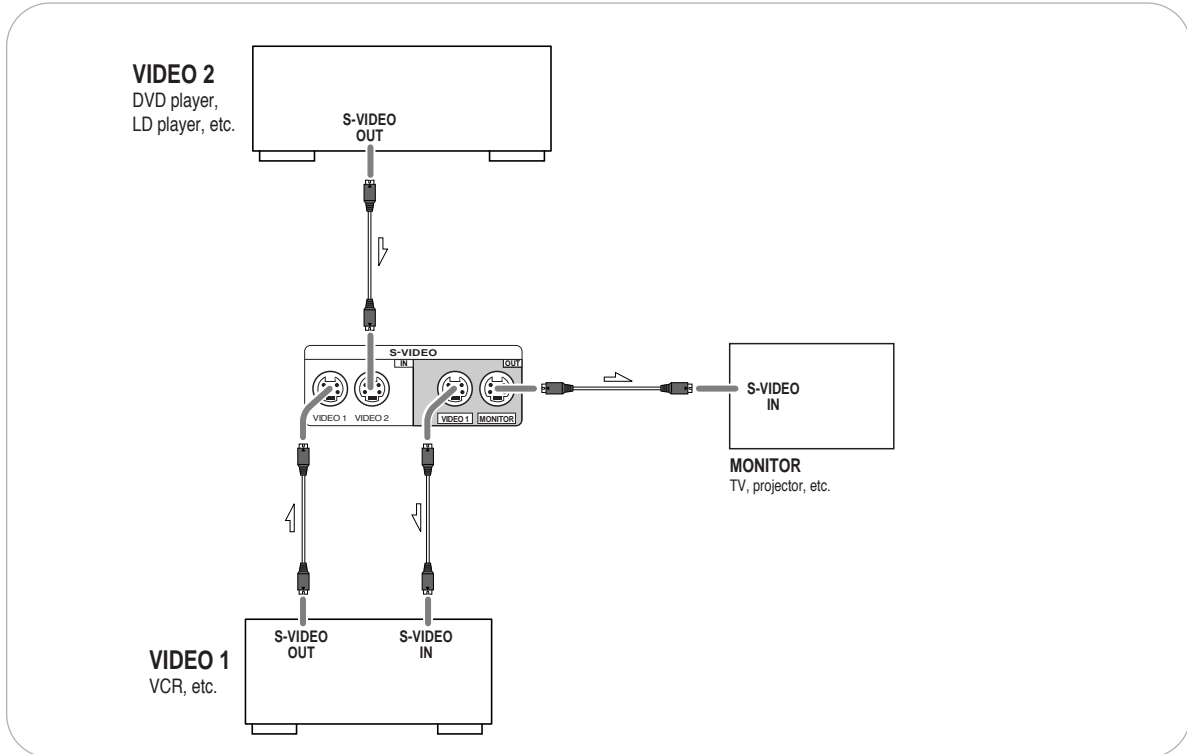
6. CONNECTING VIDEO COMPONENTS equipped with COMPONENT VIDEO jacks

VIDEO 2
DVD player,
LD player, etc.

COMPONENT
VIDEO OUT
P_R P_B Y

COMPONENT
VIDEO 1   VIDEO 2   [MONITOR]
IN   IN   OUT

P_R/C_R P_B/C_B Y

VIDEO 1
VCR, etc.

P_R P_B Y
COMPONENT
VIDEO OUT

P_R P_B Y
COMPONENT
VIDEO IN

MONITOR
TV, projector, etc.

· The excellence in picture quality is as follows:

"COMPONENT" > "S-VIDEO" > normal(composite) "VIDEO"

· When making COMPONENT VIDEO connections, connect "Y" to "Y", "P_B/C_B" to "C_B" (or "B-Y", "P_B") and "P_R/C_R" to "C_R"(or "R-Y", "P_R").

· Signals input into the COMPONENT VIDEO IN jacks will be output in only the MONITOR COMPONENT VIDEO OUT jacks.

■ Notes :

· The on-screen display function and recording the component video signals are not available when using the COMPONENT VIDEO connections.

· When Sherwood DVD player such as V-756, etc. is connected to the DIGI LINK jack for system control, you should connect the DVD player to the "VIDEO 2" jacks of this unit.

Because, if the PLAY button, etc. is pressed on the DVD player, the VIDEO 2 is automatically selected as an input source on this unit and the playback, etc. starts

7. CONNECTING DIGITAL INs and OUT

· The COAXIAL or the OPTICAL DIGITAL OUTs of the components that are connected to CD and VIDEO 1~3 of this unit can be connected to these DIGITAL INs.
· If a digital recorder or other component with OPTICAL DIGITAL IN/OUT jacks is connected to the corresponding jacks of this unit, you can playback and/or record the high quality sound of CD's, etc. without analog conversion or degradation.
· A digital input should be connected to the components such as a CD player, LD player, DVD player, etc. capable of outputting DTS Digital Surround, Dolby Digital or PCM format digital signals, etc.
· For details, refer to the operating instructions of the component connected.
· When making the COAXIAL DIGITAL connection, be sure to use a 75Ω COAXIAL cord, not a conventional AUDIO cord.
· All of the commercially available optical fiber cords cannot be used for the equipment. If there is an optical fiber cord which cannot be connected to your equipment, consult your dealer or nearest service organization.
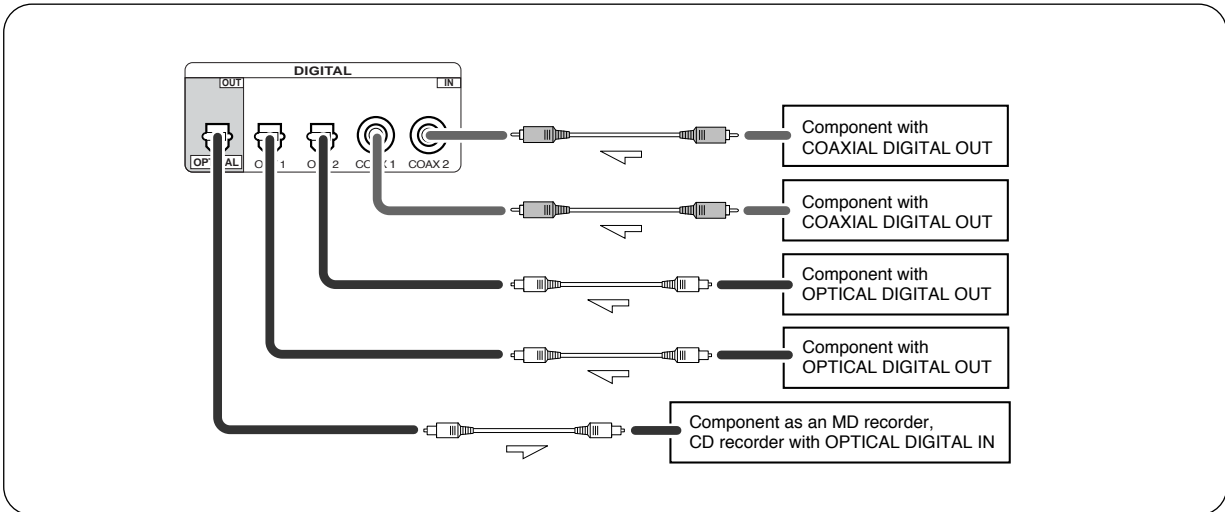

8. CONNECTING SPEAKERS

· Be sure to connect speakers firmly and correctly according to the channel(left and right) and the polarity(+ and -). If the connections are faulty, no sound will be heard from the speakers, and if the polarity of the speaker connection is incorrect, the sound will be unnatural and lack bass.
· For installing the speakers, refer to "Speaker placement" on page 24.
· After installing the speakers, first adjust the speaker settings according to your environment and speaker layout.(For details, refer to "Adjusting the speaker settings" on page 24.)
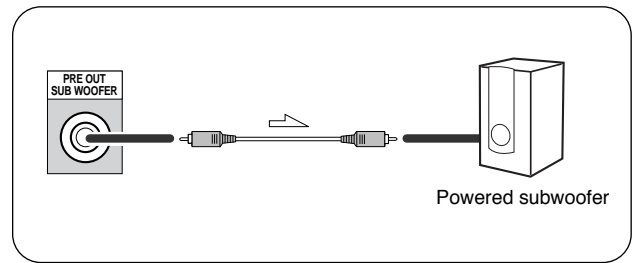
Caution :
· Be sure to use the speakers with the impedance of 6 ohms or above.
· Do not let the bare speaker wires touch each other or any metal part of this unit. This could damage this unit and/or the speakers.
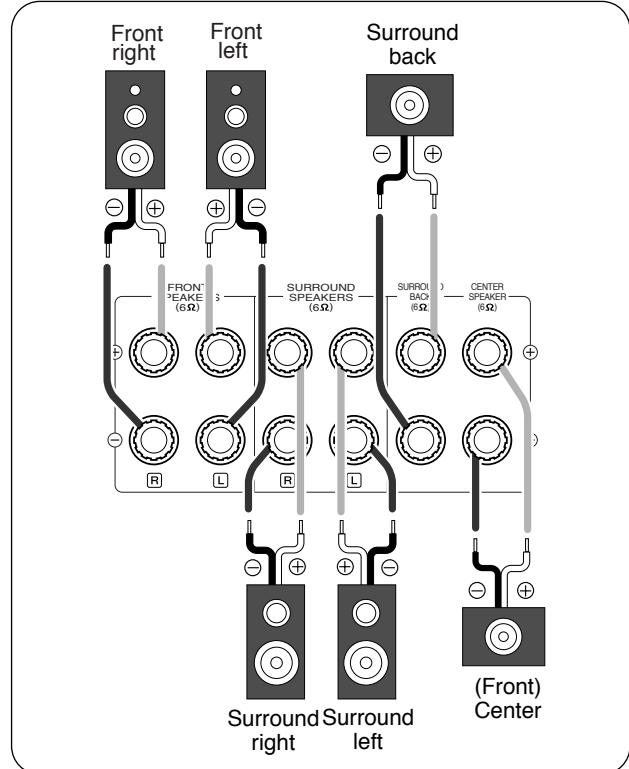
9. SUBWOOFER PRE OUT connection

• To emphasize the deep bass sounds, connect a powered subwoofer.

PRE OUT
SUB WOOFER

Powered subwoofer

10. CONNECTING SYSTEM CONTROL

• Connect this jack to the DIGI LINK jack of the external Sherwood component that uses the DIGI LINK II or III remote control system.

DIGILINK

Sherwood component
with DIGI LINK II or III

CD player

Tape deck

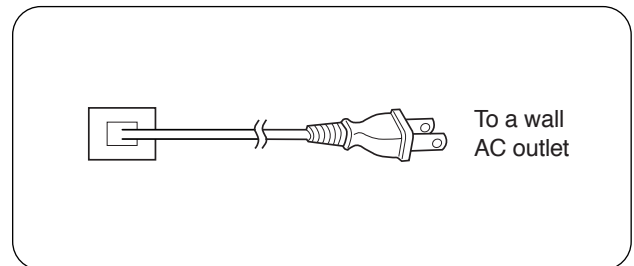DVD player

System
control
cord
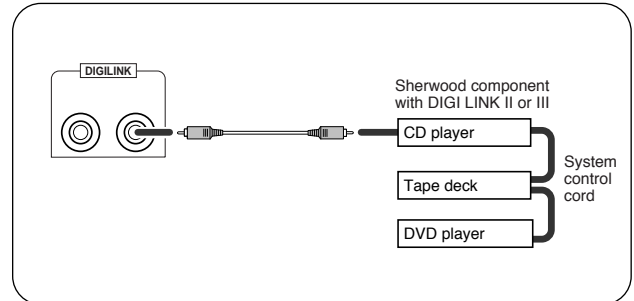
11. SWITCHED AC OUTLET

• This outlet is switched on(power-on mode) and off(standby mode) according to power control as follows(Maximum total capacity is 100 W).

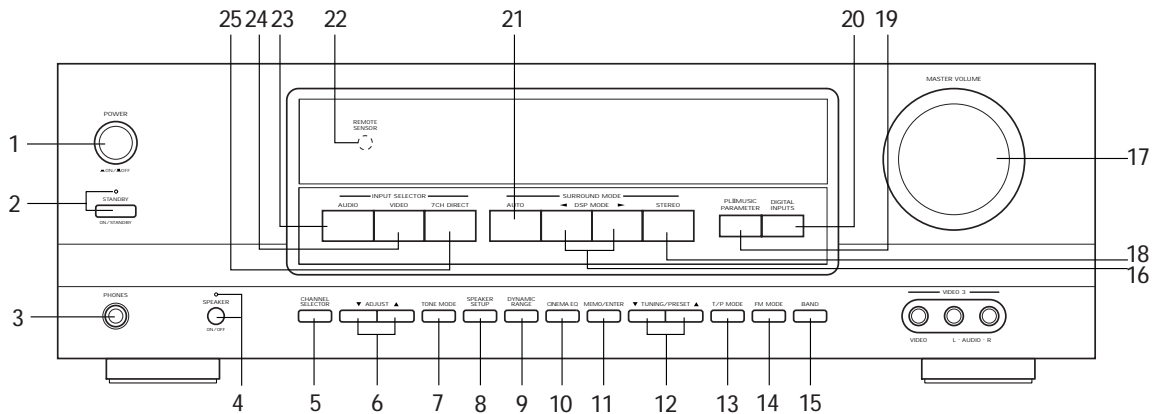Standby mode - Switched AC outlet off
Power-on mode - Switched AC outlet on
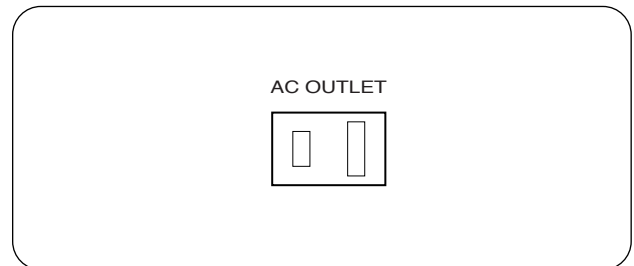
AC OUTLET

12. AC INPUT CORD

• Plug this cord into a wall AC outlet.

To a wall
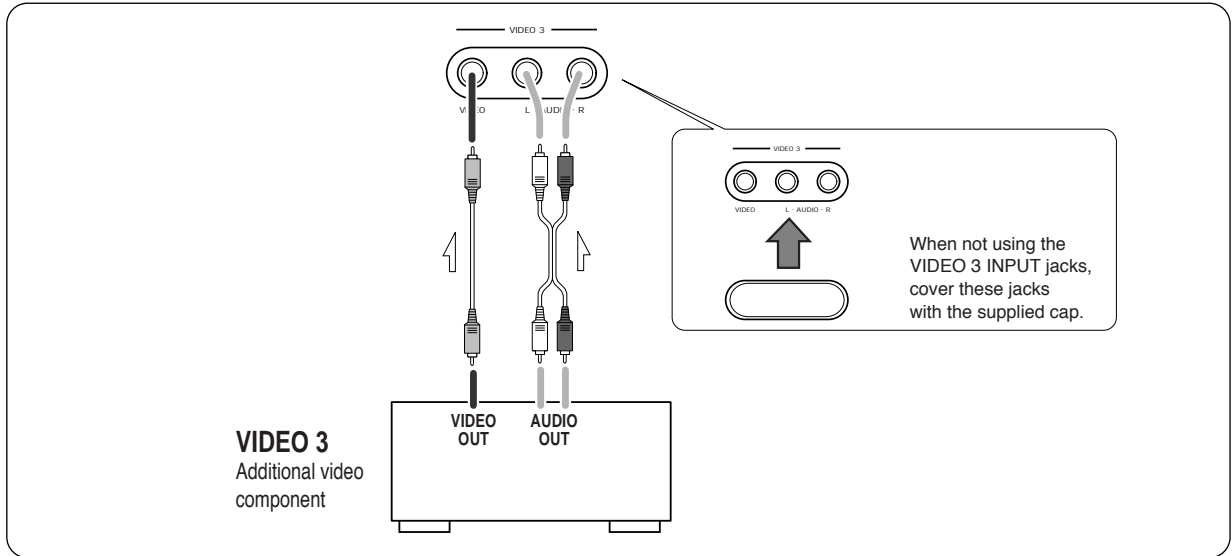AC outlet

Front Panel Controls

1. POWER switch
2. STANDBY button/indicator
3. HEADPHONE jack
4. SPEAKER button/indicator
5. CHANNEL SELECTOR button
6. ADJUST UP/DOWN(▲/▼) buttons
7. TONE MODE button
8. SPEAKER SETUP button
9. DYNAMIC RANGE button
10. CINEMA EQ button
11. MEMORY/ENTER button
12. TUNING/PRESET UP/DOWN(▲/▼) buttons
13. TUNING/PRESET MODE button

14. FM MODE button
15. BAND button
16. DSP MODE UP/DOWN(▶/◀) buttons
17. MASTER VOLUME control knob
18. STEREO button
19. PL II MUSIC PARAMETER button
20. DIGITAL INPUTS button
21. AUTO button
22. Remote sensor
23. AUDIO input selector button
24. VIDEO input selector button
25. 7 CH DIRECT button

■ FLUORESCENT DISPLAY
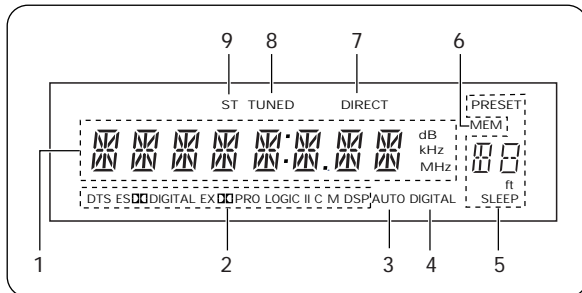
1. Input, frequency, volume level, operating information, etc.
2. Surround mode indicators
3. AUTO indicator
4. DIGITAL input signal indicator
5. PRESET number, SLEEP time, Speaker distance display
6. MEMory indicator
7. DIRECT indicator
8. TUNED indicator
9. STEREO indicator

11

■ VIDEO 3 VIDEO/AUDIO INPUT JACKS

VIDEO 3

VIDEO   L · AUDIO · R

VIDEO 3

VIDEO   L · AUDIO · R

When not using the
VIDEO 3 INPUT jacks,
cover these jacks
with the supplied cap.

VIDEO
OUT

AUDIO
OUT

VIDEO 3
Additional video
component

• The VIDEO 3 jacks may be also connected to an additional video component such as a camcorder, a LD player or a video game player, etc.

Universal Remote Controls

This universal remote control can operate not only this receiver but also most popular brands of audio and video components such as CD players, cassette decks, TVs, cable boxes, VCRs, DVD players, satellite receivers, etc.
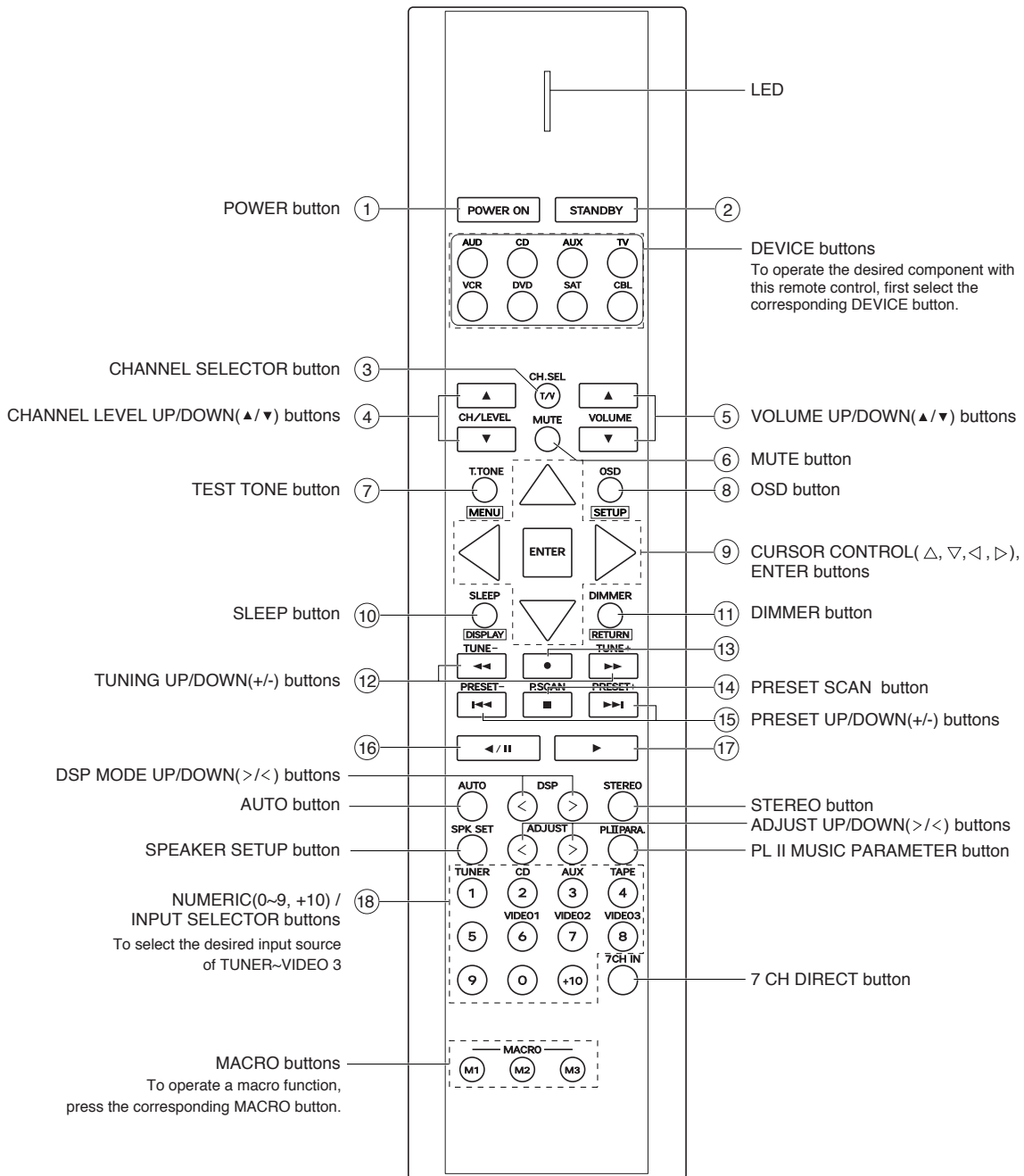• To operate 7 components other than this receiver, you should enter the setup code for each component.
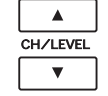 (For details, refer to "USING FUNCTIONS OF REMOTE CONTROL" on page 16.)
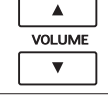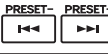
■Digi link system remote controls
This remote control can also operate Sherwood compatible components bearing the DIGI LINK (II or III) logo.
• For digi link system remote control operation, first make the DIGI LINK connections between Sherwood components.
• The numbered buttons on the remote control have different functions in different device modes. For details, refer to "FUNCTION TABLE of the NUMBERED BUTTONS" on the following page 14.

LED

POWER button ①

STANDBY ②

DEVICE buttons
To operate the desired component with this remote control, first select the corresponding DEVICE button.

CHANNEL SELECTOR button ③

CHANNEL LEVEL UP/DOWN(▲/▼) buttons ④

⑤ VOLUME UP/DOWN(▲/▼) buttons

⑥ MUTE button

TEST TONE button ⑦

⑧ OSD button

⑨ CURSOR CONTROL(△, ▽, ◁ , ▷), ENTER buttons

SLEEP button ⑩

⑪ DIMMER button

⑬

TUNING UP/DOWN(+/-) buttons ⑫

⑭ PRESET SCAN button

⑮ PRESET UP/DOWN(+/-) buttons

⑯

⑰

DSP MODE UP/DOWN(>/<) buttons

AUTO button

STEREO button
ADJUST UP/DOWN(>/<) buttons

SPEAKER SETUP button

PL II MUSIC PARAMETER button

NUMERIC(0~9, +10) / INPUT SELECTOR buttons ⑱
To select the desired input source of TUNER~VIDEO 3

7 CH DIRECT button

MACRO buttons
To operate a macro function, press the corresponding MACRO button.

■FUNCTION TABLE of the NUMBERED BUTTONS

| Device to be controlled / Button symbol	CD (for CD player)	AUX (for tape deck)	TV (for TV)	VCR (for VCR)	DVD (for DVD player)	SAT (for satellite receiver)	CBL (for cable box)
① POWER ON	POWER ON	POWER ON	POWER ON	POWER ON	POWER ON	POWER ON	POWER ON
② STANDBY	STANDBY (POWER OFF)	STANDBY (POWER OFF)	STANDBY (POWER OFF)	STANDBY (POWER OFF)	STANDBY (POWER OFF)	STANDBY (POWER OFF)	STANDBY (POWER OFF)
③ CH.SEL (T/V)	—	—	INPUT SELECTOR	INPUT SELECTOR	—	INPUT SELECTOR	INPUT SELECTOR
④ ▲ CH/LEVEL ▼	—	—	CHANNEL LEVEL UP/DOWN(▲/▼)	CHANNEL LEVEL UP/DOWN(▲/▼)	—	CHANNEL LEVEL UP/DOWN(▲/▼)	CHANNEL LEVEL UP/DOWN(▲/▼)
⑤ ▲ VOLUME ▼	—	—	VOLUME UP/DOWN(▲/▼)	VOLUME UP/DOWN(▲/▼)	—	VOLUME UP/DOWN(▲/▼)	VOLUME UP/DOWN(▲/▼)
⑥ MUTE	—	—	MUTE	MUTE	—	MUTE	MUTE
⑦ T.TONE MENU	—	—	—	—	MENU	—	—
⑧ OSD SETUP	—	—	—	—	SETUP	—	—
⑨ △▽◁▷ ENTER	—	—	—	—	CURSOR CONTROL / ENTER	—	—
⑩ SLEEP DISPLAY	—	—	—	—	DISPLAY	—	—
⑪ DIMMER RETURN	—	—	—	—	RETURN	—	—
⑫ TUNE− ◄◄ TUNE+ ►►	—	REWIND(◄◄) / FAST FORWARD(►►)	—	REWIND(◄◄) / FAST FORWARD(►►)	REVERSE SEARCH(◄◄) / FORWARD SEARCH(►►)	—	—
⑬ ●	—	RECORD	—	RECORD	—	—	—
⑭ P.SCAN ■	STOP	STOP	—	STOP	STOP	—	—
⑮ PRESET− ◄◄ PRESET+ ►►|	REVERSE SKIP(◄◄) / FORWARD SKIP(►►)	—	—	—	REVERSE SKIP(◄◄) / FORWARD SKIP(►►)	—	—
⑯ ◄/II	PAUSE	REVERSE PLAY	—	PAUSE	PAUSE	—	—
⑰ ►	PLAY	FORWARD PLAY	—	PLAY	PLAY	—	—
⑱ 0 ~ 9 , +10	NUMERIC	—	NUMERIC	NUMERIC	NUMERIC	NUMERIC	NUMERIC

Notes:
- Some functions for each component may not be available or may work differently.
- Depending on other kinds of components that are available for each DEVICE button, some functions may not be available or may work differently, too.
- For details about functions, refer to the operating instructions of each component.

14

OPERATING COMPONENTS WITH REMOTE CONTROL

1 Enter the setup code for each component other than this receiver you wish to control. For details, refer to "Entering a setup code" on page 16.

2 Turn on the component you want to operate.

3 Press the DEVICE button on the remote control corresponding to the component you wish to operate.

4 Aim the remote control at the REMOTE SENSOR of the component you wish to control and press the button corresponding to the operation you want.

• When operating a Sherwood CD player or tape deck using digi link system remote control, aim the remote control at the REMOTE SENSOR of this receiver. However, to operate a Sherwood DVD player, aim at the REMOTE SENSOR of the corresponding component.

REMOTE CONTROL OPERATION RANGE

• Use the remote control unit within a range of about 7 meters (23 feet) and angles of up to 30 degrees aiming at the remote sensor.

7m

30° 30°
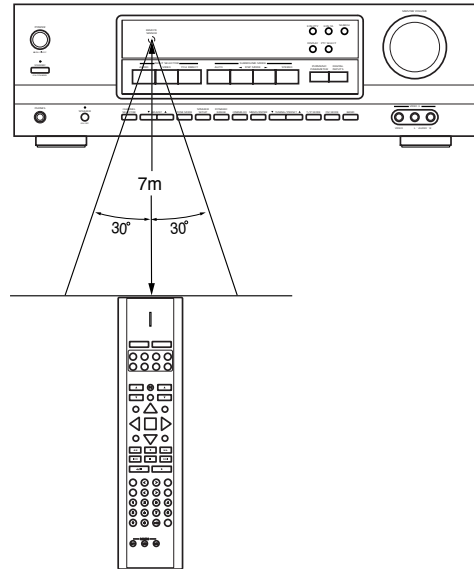
LOADING BATTERIES

• When the remote control does not operate, the old batteries should be replaced. In this case, load new batteries within several minutes after removing old batteries.
• If the batteries are removed or have been exhausted for a longer period of time, memorized contents will be cleared. Should this happen, you should memorize them again.

1 Remove the cover.
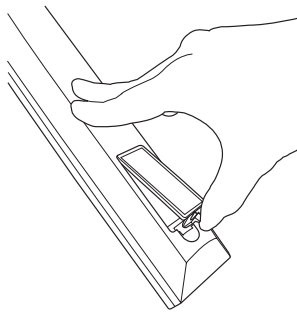
2 Load two batteries("AAA" size) matching the polarity.
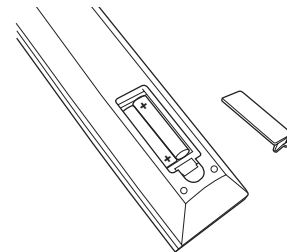
• Remove the batteries when they are not used for a long time.
• Do not use the rechargeable batteries(Ni-Cd type).
• Be sure to use alkaline batteries.

15

USING FUNCTIONS OF REMOTE CONTROL

· This remote control can control up to 8 different components.
· Before operating audio and video components other than this receiver with using this remote control, the setup code for each component should be entered.
· For system remote control operation, "000" was stored previously in the memory of the device button "CD" for Sherwood CD player, "DVD" for Sherwood DVD player and "AUX" for Sherwood tape deck respectively as its factory setup code. So, you don't need to enter its code for each Sherwood component except in such a case that its code does not work.

Entering a setup code

1 Turn on the component you want to control

2 Find the setup codes according to the type and the brand name of your component, referring to "Setup Code Table" on page 42.

3 Press and hold down both the ENTER button and the DEVICE button you want for more than 1 second.

DEVICE buttons
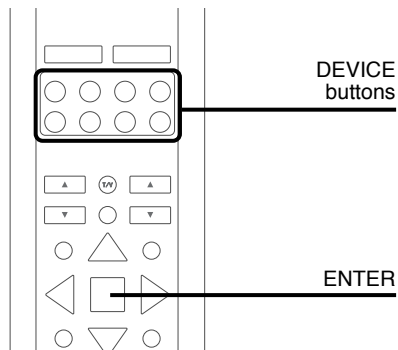
ENTER

• The LED will flicker once.

Note:
• The AUDIO button is unavailable for the audio components other than this receiver.

4 Enter a 3 digit code, aiming the remote control at the remote sensor on the component.
Example) When entering "001".

$0 \rightarrow 0 \rightarrow 1$

MACRO
M1 M2 M3
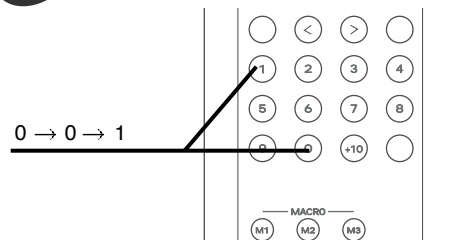
• If entering is performed successfully, the LED will flicker twice.
• To be sure that the setup code is correct, press the POWER(or STANDBY) button.
  If your component is tuned off, the setup code is correct.
• When your component is not turned off, repeat the above steps 2 to 4, trying each code for your component until you find one that works.

Notes:
• If the LED did not flicker twice, then repeat the above steps 3 to 4 and try entering the same code again.
• Manufacturers may use different setup codes for the same product category. For that reason, it is important that you check to see if the code you have entered operates as many controls as possible. If only a few functions operate, check to see if another code will work with more buttons.
• When operating a Sherwood CD player or tape deck using the system remote control, aim the remote control at the REMOTE SENSOR on this receiver. However, in case of Sherwood DVD player and MD recorder, aim it at the REMOTE SENSOR on the corresponding component.

5 Repeat the above steps 1 to 4 for each of your components.

Using a punch-through function

This remote control may be programmed to operate either the AUDIO volume punch-through or the TV volume and/or TV channel punch-through in conjunction with any of the eight components controlled by this remote control.
For example, since this receiver will likely be used as the sound system while watching TV, you may want to adjust this receiver's volume although this remote control is set to control the TV.
• When programming this remote control for the AUDIO volume punch-through, press and hold down both "AUD" button and "VOLUME ▲" button for more than 1 second.

AUD

+
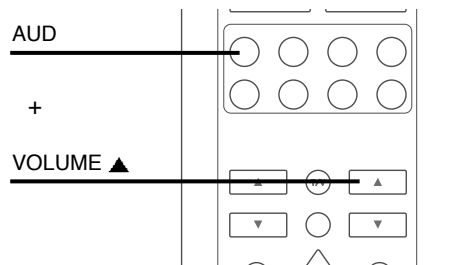
VOLUME ▲

• If programming is performed successfully, the LED will flicker twice.
• When you want either TV volume or TV channel punch-through, press and hold down both "TV" button and either "VOLUME ▲" or "CH/LEVEL ▲" button for more than 1 second.

Note :
• If you use one of AUDIO and TV volume punch-through functions, you cannot use the other.

■**Removing a punch-through function**
• When removing the AUDIO volume punch-through, press and hold down both "AUD" button and "VOLUME ▼" button for more than 1 second.

AUD

+
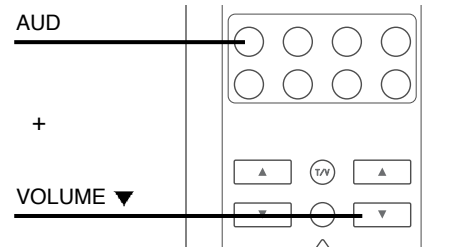
VOLUME ▼

• If removing is performed successfully, the LED will flicker twice.
• When you want to remove either TV volume or TV channel punch-through, press and hold down both "TV" button and either "VOLUME ▼" or "CH/LEVEL ▼" button for more than 1 second.

■**Removing all punch-through functions**
Press and hold down both "AUD" button and "AUTO" button for more than 1 second.

AUD

+

AUTO
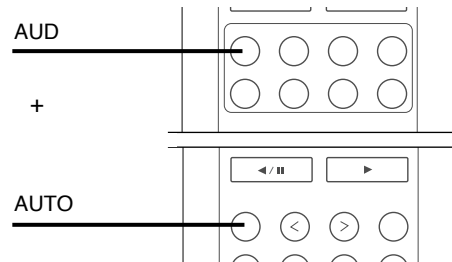
• If removing all punch-through functions is performed successfully, the LED will flicker twice.

Programming a macro function

• The macro function enables you to program a series of button operations(up to 10) on this remote control into a single button.

• You can store up to three separate macro command sequences into "M1", "M2" and "M3" buttons.

1 Press and hold down both "ENTER" button and one of three NUMERIC buttons ("1"~"3") corresponding to "M1"~"M3" buttons for more than 1 second.

Example) When programming a series of button operations into "M1" button.

ENTER

+

1
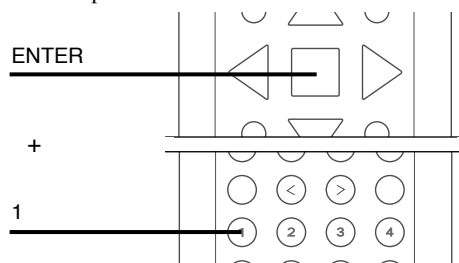
• If the macro mode is entered, the LED will flicker once.

2 Press the operation buttons you want to program in order.

■Note:
You should press the corresponding DEVICE buttons before pressing each operation button.
Example) When playing a DVD on the DVD player connected to VIDEO 2 jacks of this receiver.
1. Press "AUDIO" button to control this receiver.
2. Press "POWER" button to turn this receiver on.
3. Press "AUDIO" button to control this receiver.
4. Press "VIDEO 2(7)" button to select the desired input source.
5. Press "DVD" button to control the DVD player.
6. Press "POWER" button to turn the DVD player on.
7. Press "DVD" button to control the DVD player.
8. Press " ▶" button to start playback.

AUD → POWER ON → AUD → VIDEO2 7
↓
▶ ← DVD ← POWER ON ← DVD
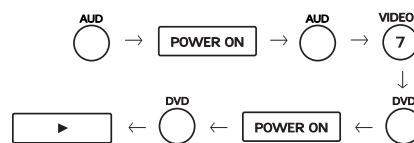
3 Press "ENTER" button.

ENTER
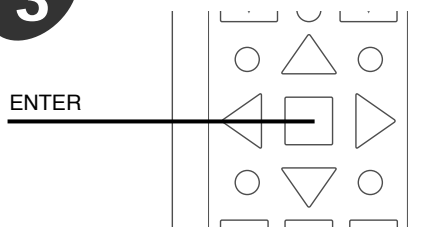
• If the programming is performed successfully, the LED will flicker twice.

■To remove a macro program
• When removing a macro program, perform the above steps 1 and 3, but ignore the step 2.

■To change a macro program
• When a new macro program is stored into a MACRO button with performing the above steps 1 to 3, the previous macro program is cleared from the memory of the MACRO button.

Operating a macro function

• Aim the remote control at the REMOTE SENSORs of the components to be controlled and press the MACRO button you want.
Example) When pressing "M1" button.

9 0 +10

M1
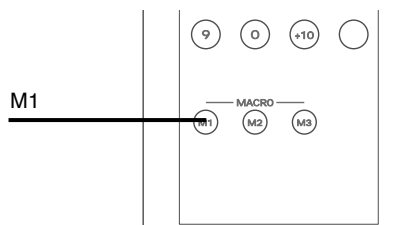
MACRO
M1 M2 M3

■Notes:
• The codes programmed into a MACRO button will be transmitted at an interval of 0.5 seconds.
 However, some components may not be able to complete one operation in 0.5 seconds and may miss the next code.
 In this case, the macro function cannot control the corresponding components correctly.
• Be sure to use the remote control within the remote control operation range of the components.
• Depending on the operation status of the components, etc., the macro function cannot control the corresponding components correctly.
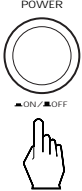
Operations

• Note : Before operating this receiver with the supplied remote control, refer to "Universal Remote Controls" on page 13 for details about operation.

LISTENING TO A PROGRAM SOURCE
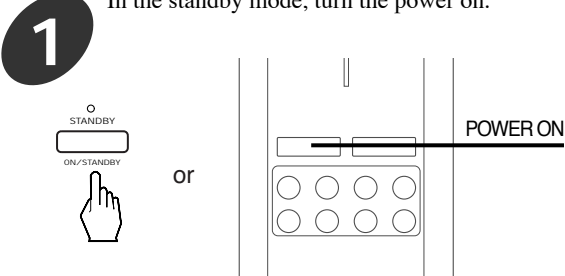
Before operation

• Enter the standby mode.

POWER

• The STANDBY indicator lights up.
※ **When the power operation switch is in the OFF or STANDBY state, the apparatus is still connected on some AC line voltages.**
Please be sure to unplug the cord when you leave home for, say, a vacation.
• To switch the power off, push the POWER switch again.
• Then the power is cut off and the STANDBY indicator goes off.

1 In the standby mode, turn the power on.

STANDBY
ON/STANDBY   or   POWER ON

• In the operating mode, if the STANDBY button on the remote control is pressed, the receiver is turned off and enters the standby mode.
• In the standby mode, if the INPUT SELECTOR button is pressed, the receiver is turned on automatically and the desired input is selected.
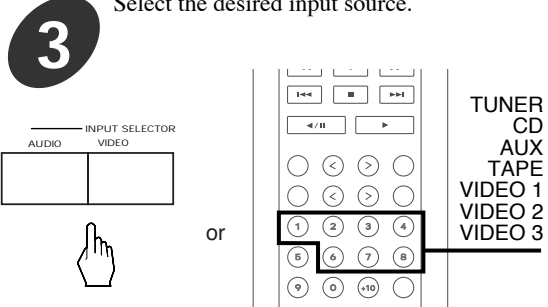
2 Switch the speakers on.

SPEAKER
ON/OFF

• Then the SPEAKER indicator lights up and the sound can be heard from the speakers connected to the speaker terminals.
• When using the headphone for private listening, press the SPEAKER button again to switch the speakers off.

3 Select the desired input source.

INPUT SELECTOR
AUDIO   VIDEO

or
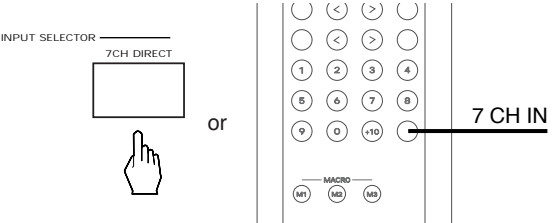
TUNER
CD
AUX
TAPE
VIDEO 1
VIDEO 2
VIDEO 3

• Each time the "AUDIO" button on the front panel is pressed, the input source changes as follows;
→ TUNER → CD → TAPE → AUX →
(frequency display)

• Each time the "VIDEO" button on the front panel is pressed, the input source changes as follows;
→ VIDEO 1 → VIDEO 2 → VIDEO 3 →

■ When selecting the 7 CH DIRECT as desired,

INPUT SELECTOR
7CH DIRECT

or   7 CH IN

MACRO
(M1) (M2) (M3)

• "7-DIRECT" is displayed and the 7 or 6 separate analog signals from the component connected to this input can be controlled only by channel level(s) and volume depending on the surround back speaker setting.
• Press the 7 CH DIRECT button or select the desired input source to cancel the 7 CH direct function.
• These analog signals can be heard only, not recorded.

19

When CD, VIDEO 1~3 is selected as an input source

4 Select the digital or analog input connected as desired.
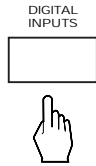
DIGITAL
INPUTS

• Each time this button is pressed, the corresponding input is selected as follows ;

→ A(nalog) → c(oaxial) 1 → c(oaxial) 2 →
o(ptical) 2 ← o(ptical) 1 ←
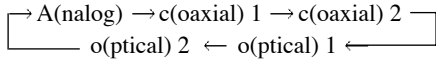
• To listen to a DTS or Dolby Digital program source in the 2-CH downmix mode, in the stereo mode, the corresponding digital input should be selected. (For details, refer to "Downmixing into 2 front channels" on page 31.)

■ Notes :
• When the selected optical or coaxial digital input is not connected, the "DIGITAL" indicator flickers, meaning no sound. (Refer to "ENJOYING SURROUND SOUND" on page 27.)
• The sound from the component connected to the selected digital input can be heard regardless of the selected input source.

5 Operate the selected component for playback.

• When playing back the program sources with surround sound, refer to "ENJOYING SURROUND SOUND" on page 27.

6 Adjust the (overall) volume.

MASTER VOLUME

DOWN   UP   or

VOLUME
▲,▼

7 To compensate for edgy or shrill movie sound tracks.

CINEMA EQ

• Then "C-EQ OFF" is scrolled.
• Press it again to work, the "C-EQ ON" is scrolled.
• When 96 kHz PCM(2 CH stereo) signals are input, the cinema EQ function does not work.

8 To mute the sound.
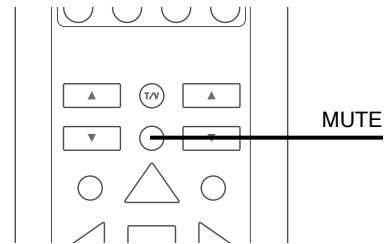
MUTE

• "MUTE" will flicker.
• To resume the previous sound level, press it again.
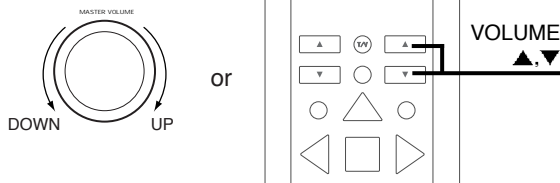
9 To listen with the headphones.
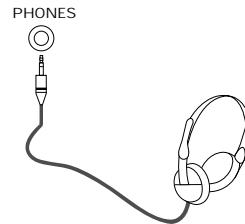
PHONES

• Ensure that the SPEAKER button is set to off.
• When listening to a DTS or Dolby Digital program source, if the headphones are plugged and the SPEAKER button is set to off, it enters the 2-CH downmix mode automatically. (For details, refer to "Downmixing into 2 front channels" on page 31.)

Adjusting the tone(bass and treble)

10 Enter the tone mode.
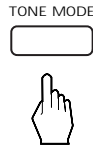
TONE MODE

• Each time this button is pressed, the corresponding tone mode is selected and shown for several seconds as follows:

→ BASS → TRBL(treble) → TONE ON ⌐

• When the tone mode is off, "TONE OFF" is shown.

11 At the desired tone mode, adjust the tone as desired.
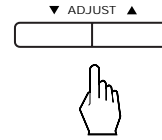
▼ ADJUST ▲

• At "TONE ON" mode, you can select "TONE OFF" mode and vice versa.

TONE ON: When adjusting the tone for your taste.
↕   ("DIRECT" indicator goes off.)
TONE OFF: When listening to a program source without the tone effect.
    ("DIRECT" indicator light up.)

• In general, we recommend the bass and the treble to be set to 0(flat) level.

■ Notes:
• If the tone display disappears, start from the step 10 again.
• Extreme settings at high volume may damage your speakers.
• When the digital signals from DTS or Dolby Digital program sources are input in available surround mode or the 7 CH DIRECT is selected as an input source, you cannot adjust the tone and can hear a program source without the tone effect.

SURROUND SOUND

· This receiver incorporates a sophisticated Digital Signal Processor that allows you to create optimum sound quality and sound atmosphere in your personal Home Theater.

Surround modes

■ DTS Digital Surround

DTS Digital Surround(also called simply DTS) is a multi-channel digital signal format which can handle higher data rates than Dolby Digital. Although both Dolby Digital and DTS are 5.1 channel formats, discs bearing the "[dts DIGITAL SURROUND]"

are generally thought to provide better sound quality due to the lower audio compression required.
It also provides wide dynamic range and separation, resulting in magnificent sound.

■ DTS - ES Extended Surround™ ([dts ES EXTENDED SURROUND])

This is a new multi channel digital signal format which greatly improves the 360- degree surround impression and space expression thanks to further expanded surround signals, offering high compatibility with the conventional DTS format.
In addition to the 5.1 channels, DTS-ES Extended Surround also offers the surround back (sometimes also referred to as "surround center") channel for surround playback with a total of 6.1 channels. DTS-ES Extended Surround includes two signal formats with different surround signal recording methods as follows:

• DTS-ES™ Discrete 6.1

Because the signals for 6.1 channels (including the surround back channel) are fully independent, it is possible to achieve a sense that the acoustic image are moving about freely among the background sounds surrounding the listener from 360 degrees.
Though maximum performance is achieved when sound tracks recorded with this system are played using a DTS -ES decoder, when played with a conventional DTS decoder, the surround back channel signals are automatically downmixed to the surround left and surround right channels so that none of the signal components are lost.

• DTS - ES™ Matrix 6.1

With this format, the additional surround back channel signals undergo matrix encoding and are input to the surround left and surround right channels beforehand. During playback, they are decoded to the surround left, surround right and surround back channels.
Because the bit stream format is 100% compatible with conventional DTS signals, the effect of the DTS-ES Matrix 6.1 format can be achieved even with DTS 5.1- channel signal sources. Of course, it is possible to play DTS-ES Matrix 6.1 - channel signal sources with a DTS 5.1 - channel decoder.
When DTS-ES Discrete 6.1 or Matrix 6.1 sources are decoded with a DTS - ES decoder, the format is automatically detected upon decoding and the optimum surround mode is selected. However, some DTS - ES Matrix 6.1 sources may be detected as DTS sources. In this case, the DTS - ES Matrix mode should be selected manually to play these sources.

■ DTS Neo : 6™ surround

This mode applies conventional 2-channel signals such as digital PCM or analog stereo signals to the high precision digital matrix decoder used for DTS-ES Matrix 6.1 to achieve 6.1-channel surround playback. DTS Neo : 6 surround includes two modes for selecting the optimum decoding for the signal source.

• DTS Neo : 6 Cinema

This mode is optimum for playing movies. Decoding is performed with emphasis on separation performance to achieve the same atmosphere with 2-channel sources as with 6.1-channel sources.

• DTS Neo : 6 Music

This mode is suited mainly for playing music. The front left and front right signals bypass the decoder and are played directly so there is no loss of sound quality, and the effect of the surround signals from the center, surround left, surround right and surround back channels adds a natural sense of expansion to the sound field.

"DTS", "DTS-ES" and "Neo : 6" are trademarks of Digital Theater Systems,Inc.

■ Dolby Digital

Dolby Digital is the multi- channel digital signal format developed by Dolby Laboratories. Discs bearing the "[DD DOLBY DIGITAL]" includes the recording of up to 5.1 channels of

digital signals, which can reproduce much better sound quality, spatial expansion and dynamic range characteristics than the previous Dolby Surround effect.
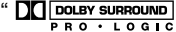
■ Dolby Digital EX

This mode creates the back (sometimes also referred to as "surround center") signals from the surround left and right signals in Dolby Digital 5.1 channel source using a matrix decoder and provides 6.1 channel surround playback. For the best results, this mode should be selected during playback of sources(bearing the "[DD DOLBY DIGITAL·EX]") recorded in

Dolby Digital Surround EX. With this additional channel, you can experience more dynamic and realistic moving sound especially.
When Dolby Digital EX sources are decoded with a Dolby Digital EX decoder, the format is automatically detected upon decoding and the Dolby Digital EX mode is selected. However, some Dolby Digital EX sources may be detected as Dolby Digital sources. In this case, the Dolby Digital EX mode should be selected manually to play these sources.

■ **Dolby Pro Logic**

Dolby Pro Logic is a specially encoded two channel surround format which consists of four channels (front left, center, front right and surround). Sources bearing the " [⫿⫿ DOLBY SURROUND] " provide the theater-like surround sound.
P R O · L O G I C

The surround channel is monaural, but is played through both surround speakers.

■ **Dolby Pro Logic II surround**

This mode applies conventional 2- channel signals such as digital PCM or analog stereo signals as well as Dolby Surround signals, etc. to surround processing to offer improvements over conventional Dolby Pro Logic circuits. Dolby Pro Logic II surround includes two modes as follows:

• *Dolby Pro Logic II Movie*

When enjoying movies, this mode allows you to further enhance the cinematic quality by adding processing that emphasizes the sounds of the action special effects.

• *Dolby Pro Logic II Music*

When listening to music, this mode allows you to further enhance the sound quality by adding processing that emphasizes the musical effects.

■ **Dolby Virtual**

This mode employs sophisticated digital processing to create the illusion of "phantom" speakers, this mode allows you to experience surround sound effects from Dolby Digital, Dolby Surround or 2-channel (recorded in digital PCM or analog stereo) sources, through just a single pair of front speakers.

Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", "Surround EX" and the double-D symbol are trademarks of Dolby Laboratories.

• When using the 7 CH DIRECT INPUTs to playback the sound from an additional multichannel decoder for surround sound, you can enjoy the corresponding surround sound, too. For details, refer to the operating instructions of the component to be connected.

The following modes apply conventional 2-channel signals such as digital PCM or analog stereo signals to high performance Digital Signal Processor to recreate sound fields artificially. Select one of the three provided surround modes according to the program source you want to play.

■ **Theater**

This mode provides the effect of being in a movie theater when watching a movie.

■ **Hall**

This mode provides the ambience of a concert hall for classical music sources such as orchestral, chamber music or an instrumental solo.

■ **Matrix**

This mode reproduces a delayed signals from the surround channels to emphasize the sense of expansion for music sources.

For your reference, the sound from each channel can be reproduced according to the surround modes as follows:

Modes \ Channels	FRONT L/R	(FRONT) CENTER	SURROUND L/R	SURROUND BACK (CENTER)	SUBWOOFER
DTS	○	○	○	○	○
DTS ES DISCRETE/MATRIX	○	○	○	○	○
DTS NEO:6 CINEMA/MUSIC	○	○	○	○	—(*)
DOLBY DIGITAL	○	○	○	○	○
DOLBY DIGITAL EX	○	○	○	○	○
DOLBY PRO LOGIC	○	○	○	—	—(*)
DOLBY PRO LOGIC II MOVIE/MUSIC	○	○	○	○	—(*)
DOLBY VIRTUAL	○	—	—	—	○
MATRIX	○	○	○	○	—(*)
Other Surround	○	○	○	—	—(*)
STEREO	○	—	—	—	—(*)
7 CH DIRECT	○	○	○	○	○

• Depending on the speaker settings and the number of the encoded channels, the sound from the corresponding channels cannot be reproduced.(For details, refer to "Adjusting the speaker settings" on page 24.)
(*): Depending on the speaker settings, the sound from the subwoofer channel may be reproduced.

Speaker placement

Ideal speaker placement varies depending on the size of your room and the wall coverings, etc. The typical example of speaker placement and recommendations are as follows :

■Front left and right speakers and center speaker
- Place the front speakers with their front surfaces as flush with TV or monitor screen as possible.
- Place the center speaker between the front left and right speakers and no further from the listening position than the front speakers.
- Place each speaker so that sound is aimed at the location of the listener's ears when at the main listening position.

■Surround left and right speakers
- Place the surround speakers approximately 1 meter (40 inches) above the ear level of a seated listener on the direct left and right of them or slightly behind.

■Surround back speaker
- Place the surround back speaker at the rear center facing the front at a slightly higher position (0 to 10 inches) than the surround speakers.
- We recommend installing the surround back speaker at a slightly downward facing angle. This effectively prevents the surround back channel signals from reflecting off the TV or screen at the front center, resulting in interference and making the sense of movement from the front to the back less sharp.

■Subwoofer
- The subwoofer reproduces powerful deep bass sounds. Place a powered subwoofer anywhere in the front as desired.

■Notes :
- When using a conventional TV , to avoid interference with the TV picture, use only magnetically shielded front left and right and center speakers.
- To obtain the best surround effects, the speakers except the subwoofer should be full range speakers.
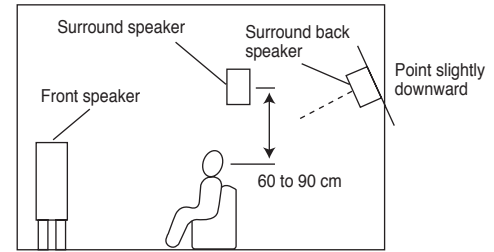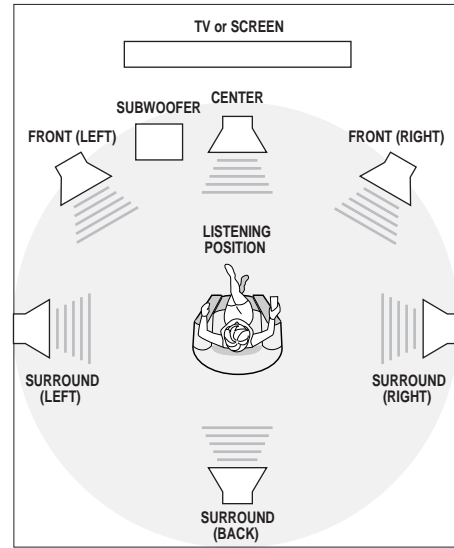
Adjusting the speaker settings

- After you have installed this unit and connected all the components, you should adjust the speaker settings for the optimum sound acoustics according to your environment and speaker layout.

■Speaker distance settings
When enjoying multi-channel surround playback with Dolby Digital and DTS sources, it is ideal that the center and surround speakers, etc. should be the same distance from the main listening position as the front speakers. By entering the distance between the listening position and each speaker, the delay times of center and surround speakers are automatically adjusted to create an ideal listening environment virtually as if the center and surround speakers were at their ideal locations respectively as below:

All speakers should be located within a circle with a radius of Df
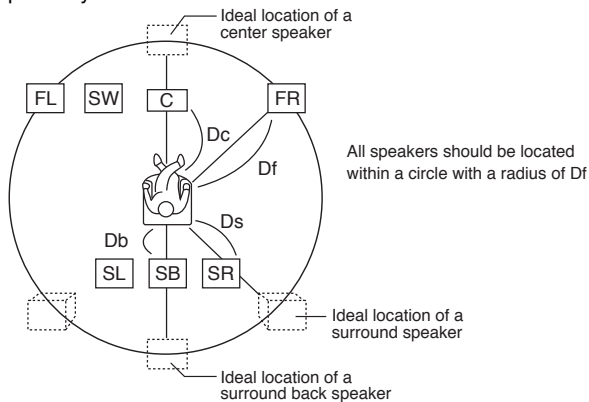
Df : Distance between front speakers and listening position
Dc : Distance between center speakers and listening position
Ds : Distance between surround speakers and listening position
Db : Distance between surround back speaker and listening position

24

■**Setting the type of speakers**

The composition of the signals output from the different channels and the frequency reponse are adjusted automatically according to the combination of speakers actually being used.

● Select "Large" or "Small" not according to the actual size of the speaker but according to the speaker's capacity for playing low frequency (bass sound below frequency set for the Crossover Frequency mode and below) signals.

　Large : Select this when connecting speakers that can fully reproduce sounds below crossover frequency(*) of your speaker.
　Small : Select this when connecting speakers that cannot fully reproduce sound below crossover frequency. When this setting is selected, sound below crossover frequency is assigned to the subwoofer or speakers which are set to "Large"(when not using a subwoofer).
　None : Select this when no speakers are connected. When this is selected, sound is sent to the front speakers.
　Yes / None : Select the desired depending on whether a subwoofer is connected or not.

● (*) : **Crossover frequency** is the frequency (Hz) below which the bass sound of each main speakers is to output from the subwoofer or from speakers which are set to "Large" (when not using a subwoofer).
● Refer to the operating instructions of the speakers to be connected. If the frequency range of your speaker is 100 Hz ~ 12 kHz, the crossover frequency have to set to 120 Hz.
● If you do not know, try comparing the sound at both settings (setting the volume to a level low enough so as not to damage the speakers) to determine the proper setting.

● Depending or relationship between speakers, settings possible for each speaker are as follows:

Front L/R	Center	Surr. L/R	Surr. Back	Subwoofer
Large	Large	Large	Large	Yes or None
			Small	
			None	
		Small	Large	
			Small	
			None	
		None	X	
	Small	Large	Large	
			Small	
			None	
		Small	Large	
			Small	
			None	
		None	X	
	None	Large	Large	
			Small	
			None	
		Small	Large	
			Small	
			None	
		None	X	
Small	Small	Small	Small	Yes
			None	
		None	X	
	None	Small	Small	
			None	
		None	X	

Refer to the above and adjust the speaker settings
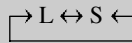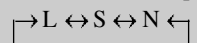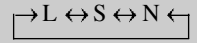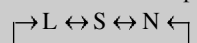
Note : When the SPEAKER button is set to off or the 7 CH DIRECT is selected as an input source, the speaker setting function cannot be available.

① When selecting each setting mode,

SPEAKER SETUP　or　SPK SET

• Each time the SPEAKER SETUP button is pressed, the speaker setting mode changes in succession and is displayed for several seconds as follows.
• When the speaker setting mode disappears, press the SPEAKER SETUP button repeatedly to select the desired mode.

② When adjusting the selected setting mode to the desired setting,

▼ ADJUST ▲　or　ADJUST <, >

• Each time the ADJUST UP(▲/≫) or DOWN(▼/≪) button is pressed, one of the settings is selected and displayed for several seconds as follows.

• When selecting the type of front speaker, "FRONT L̇ 10(ft)"	• You can select one of 2 different speaker settings. → L ↔ S ← (L: Large, S: Small)
• When selecting the distance of front speaker, "FRONT L 1̇0(ft)"	• You can adjust the distance within the range of 1 ~ 30 feet in 1 foot intervals. 1 (ft) ~ 30 (ft)
• When selecting the type of center speaker, "CNTR L̇ 10(ft)"	• You can select one of 3 different speaker settings. → L ↔ S ↔ N ← (L: Large, S: Small, N: None)
• When selecting the distance of center speaker, "CNTR L 1̇0(ft)"	• You can adjust the distance within the range of 1 ~ 30 feet in 1 foot intervals. 1 (ft) ~ 30 (ft)
• When selecting the type of surround speaker, "SURR L̇ 5(ft)"	• You can select one of 3 different speaker settings. → L ↔ S ↔ N ←
• When selecting the distance of surround speaker, "SURR L 5̇(ft)"	• You can adjust the distance within the range of 1 ~ 30 feet in 1 foot intervals. 1 (ft) ~ 30 (ft)
• When selecting the type of surround back speaker, "SURR-B L̇ 5(ft)"	• You can select one of 3 different speaker settings. → L ↔ S ↔ N ←
• When selecting the distance of surround speaker, "SURR-B L 5̇(ft)"	• You can adjust the distance within the range of 1 ~ 30 feet in 1 foot intervals. 1 (ft) ~ 30 (ft)
• When selecting the subwoofer, "SUB-W Y"	Y(es) ↔ N(one) • When the front speaker is set to "S", the subwoofer is automatically set to "Y".
• When selecting the Dolby Virtual delay time, "NARROW" • This mode can work only in the Dolby Virtual mode. In the other surround modes, this setting is just displayed.	NARROW : Relatively long distance for the main listening position to front speakers. ↕ WIDE : Relatively short distance.
• When selecting the crossover frequency, "FC 80Hz"	80 ↔ 100 ↔ 120 (unit : Hz)

※ When the speaker type is "N", the distance displays "-.-".

---
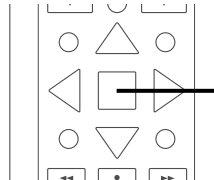
3 Memorize the adjusted speaker settings.

MEMO/ENTER

or

ENTER

• The adjusted speaker settings are stored in the memory.

1 Depending on the input digital signal format, select the desired decoding mode.
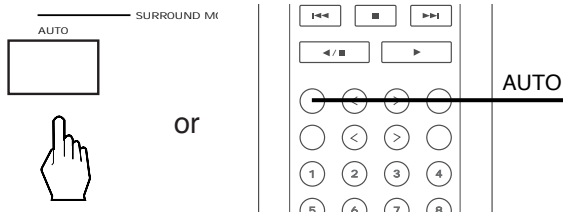
• Each time the AUTO button is pressed, the decoding mode changes as follows :

SURROUND M(
AUTO

AUTO

or

AUTO

IN-AUTO : The input digital signal format(DTS, Dolby Digital or PCM(2 channel stereo), etc.) used by the selected digital input source is detected automatically to perform the necessary decoding process for optimum surround mode.

IN-DTS : The DTS signal processing is performed only when DTS signals are input.

IN-PCM : The PCM signal processing is performed only when PCM signals are input.

■ Notes :
• Only when the digital input is selected as signal input for the input sources except TUNER, TAPE and AUX, the decoding mode can be selected.
• Noise may be generated at the beginning of playback and while searching during DTS playback in the IN-AUTO mode. In this case, try playing in the IN-DTS mode.

2 Select the desired surround mode.

SURROUND MODE
DSP MODE

or

DSP <, >
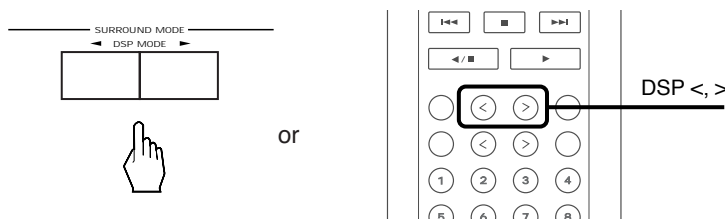
• Each time the DSP MODE ◄ (<) or ►(>) button is pressed, the surround mode changes depending on the input signal format and the selected decoding mode as follows :

Signal format being input	Selected decoding mode	Selectable surround mode
Dolby Digital EX 6.1 channel sources	IN-AUTO mode	DOLBY DIGITAL EX, DOLBY VIRTUAL
Dolby Digital 5.1 channel sources	IN-AUTO mode	DOLBY DIGITAL, DOLBY VIRTUAL
Dolby Digital 2-channel sources	IN-AUTO mode	PL II MOVIE, PL II MUSIC, PRO LOGIC, DOLBY VIRTUAL
PCM(2 channel) sources	IN-AUTO, IN-PCM mode	PL II MOVIE, PL II MUSIC, PRO LOGIC, DOLBY VIRTUAL, NEO 6 CINEMA, NEO 6 MUSIC, THEATER, HALL, MATRIX
Analog stereo sources		
DTS sources	IN-AUTO, IN-DTS mode	corresponding DTS mode

• When the analog input is selected as signal input and analog stereo signals are input, you can select the desired of these above surround modes, too.
• However, when DTS signals are input in the IN-AUTO or IN-DTS mode, the corresponding DTS mode will be selected regardless of using the DSP MODE ◄ (<) or ►(>) button.
■ Notes:
• When the selected decoding mode is not matched to the input signal format, the "DIGITAL" indicator flickers and no sound is heard. Therefore, be sure to select the required decoding mode and the available surround mode according to the input signal format.
• When the 7 CH DIRECT is selected as an input source, the decoding and surround modes cannot be selected.
• When the digital signals are not inputted, the desired surround mode cannot be selected.

■ To cancel the surround mode for stereo operation

SURROUND MODE
STEREO

or
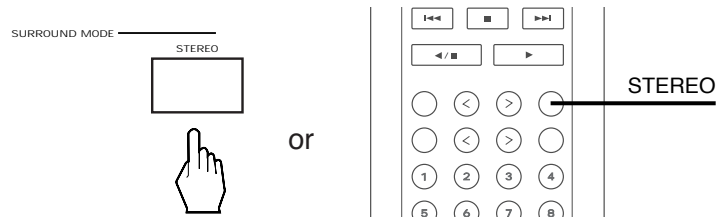
STEREO

• Then the stereo mode is selected.
• To cancel the stereo mode, select the desired surround mode with using the DSP MODE ◀ (<) or ▶(>) button.

Adjusting the Dolby Pro Logic II Music parameters

• When selecting the Dolby Pro Logic II Music mode, you can adjust the various surround parameters for optimum surround effect.

1 Press the PL II MUSIC PARAMETER button to select the desired parameter.

PLIIMUSIC
PARAMETER

or

PL II PARA.
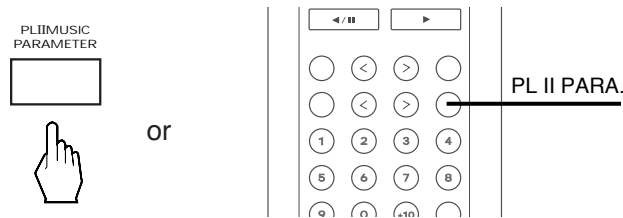
• Each time this button is pressed, the parameter changes and is displayed for several seconds as follows;

 ※**Panorama mode("PANO", default value : OFF)**
 This mode extends the front stereo image to include the surround speakers for an exciting "wraparound" effect with side wall imaging. Select "OFF" or "ON".

 ※**Center width control("C-WID", default value : 0)**
 This adjusts the center image so it may be heard only from the center speaker, only from the left/right speakers as a phantom image, or from all three front speakers to varying degrees.
 The control can be set in 8 steps from 0 to 7.

 ※**Dimension control("DIMEN", default value : 0)**
 This gradually adjusts the soundfield either towards the front or towards the rear. The control can be set in 7 steps from -4 to +2.

2 At the desired parameter, adjust it as desired.

▼ ADJUST ▲

or
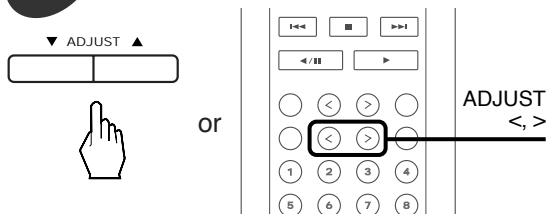
ADJUST
<, >

• If the parameter display disappears, start from the step 1 again.

3 Repeat the above steps 1 and 2 to adjust other parameters.

Adjusting each channel level with test tone

• The volume level of each channel can be adjusted easily with the test tone function.

■ Note : When the 7 CH DIRECT is selected as an input source, the SPEAKER button is set to off or it is in the stereo mode, the test tone function does not work.

1 Enter the test tone mode.
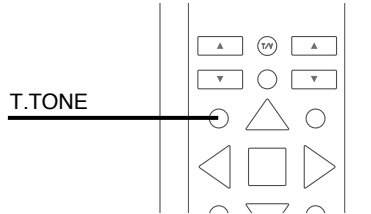
T.TONE

• The test tone will be heard from the speaker of each channel for 2 seconds as follows:

$$\rightarrow \text{FL} \rightarrow \text{C} \rightarrow \text{FR} \rightarrow \text{SR} \rightarrow \text{SB} \rightarrow \text{SL} \rightarrow$$
Front Left Center Front Right Surround Right Surround Back Surround Left

$$\text{SW} \leftarrow$$
Subwoofer
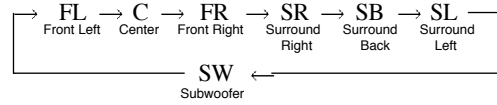
• When the speaker setting is "N", the test tone of the corresponding channel is not available.

2 At each channel, adjust the level as desired until the sound level of each speaker is heard to be equally loud.

▼ ADJUST ▲

or

CH/LEVEL
▲, ▼
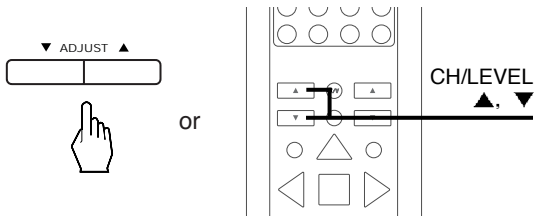
• You can select the desired channel and adjust its level with repeating the steps 1 and 2 in "Adjusting each channel level" procedure.

3 Cancel the test tone function.
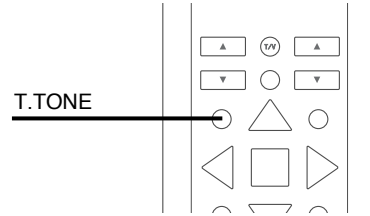
T.TONE

Adjusting the current channel level

• After adjusting each channel level with test tone, adjust the channel levels either according to the program sources or to suit your tastes.

1 Press the CHANNEL SELECTOR button.

CHANNEL
SELECTOR

or

CH.SEL
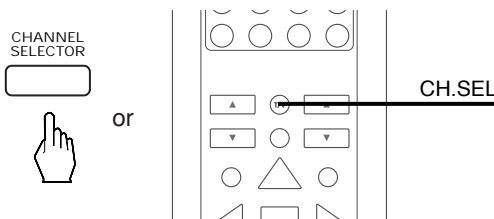
• "REF. 1"(or "USER", etc.) is displayed and each time this button is pressed, the corresponding channel is selected and displayed for several seconds as follows:

$$\rightarrow \text{FL} \rightarrow \text{C} \rightarrow \text{FR} \rightarrow \text{SR} \rightarrow \text{SB} \rightarrow$$

$$\rightarrow (\text{DTS L} \leftarrow \text{DD L}) \leftarrow \text{SW} \leftarrow \text{SL} \leftarrow$$
DTS LFE   Dolby Digital LFE
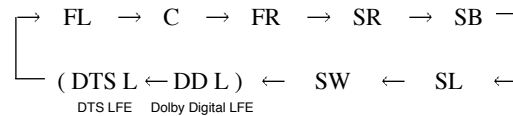
( ) : impossible when the analog input is selected as signal input.

• You can adjust the LFE level for Dolby Digital or DTS program source that includes LFE signal.
• When it is in the stereo or Dolby Virtual mode or the speaker setting is "N", center, surround L/R, surround back or subwoofer channel will not be selected.
• When the SPEAKER button is set to off, only the front L/R channel can be selected.

29

2 Adjust the level of the selected channel as desired.

▼ ADJUST ▲

or

CH/LEVEL
▲, ▼
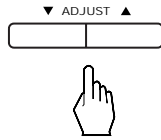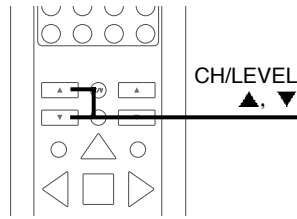
• The LFE level can be adjusted within the range of -10~0 dB and other channel levels within the range of -15~+15 dB.
• In general, we recommend the LFE level to be adjusted to 0 dB.(However, the recommended LFE level for some early DTS software is -10 dB.) If the recommended levels seem too high, lower the setting as necessary.
• If the channel display disappears, start from the step 1 again.

3 Repeat the above steps 1 and 2 to adjust each channel level.

Memorizing the adjusted channel levels

This unit gives two spaces("REF.1" and "REF.2") for memory of the adjusted channel levels. You can call the memorized again whenever you want.

1 After doing the above steps 1~3 in "Adjusting the current channel level", press the below button.

MEMO/ENTER

or
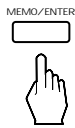
ENTER
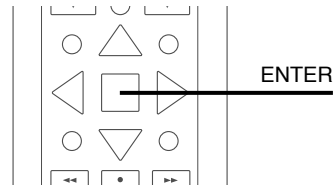
• "REF. 1" is displayed and "1" flickers.

2 Select the desired space between REF. 1 and REF. 2.

▼ ADJUST ▲

or

CH/LEVEL
▲, ▼
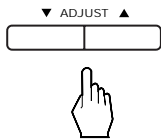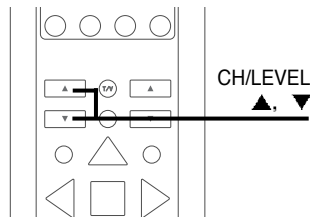
3 Press below button.

MEMO/ENTER

or
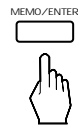
ENTER
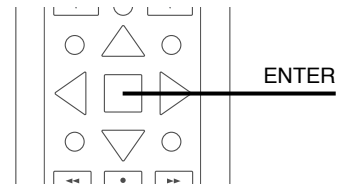
• The adjusted channel levels have now been memorized.

Calling the memorized levels

1 Press the CHANNEL SELECTOR button.

CHANNEL
SELECTOR

or

CH.SEL
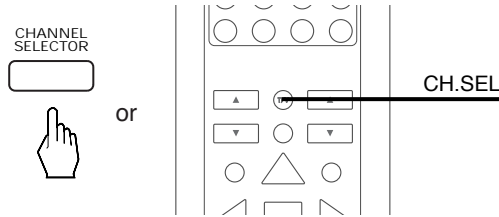
- "REF.1" (or "USER", etc.) is displayed for several seconds.
- If the channel level mode display disappears, press the CHANNEL SELECTOR button again.

2 Select the desired one between REF.1 and REF.2

▼ ADJUST ▲

or

CH/LEVEL
▲, ▼
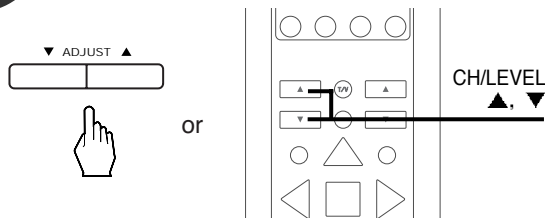
- Then the current channel levels are changed to the memorized ones.

Downmixing into 2 front channels

- Allows the multi - channel DTS or Dolby Digital signal to be reproduced through only two speakers or through headphones.
- When the digital signals from the DTS or Dolby Digital program sources are input in available surround mode, press the STEREO button.

UND MODE

STEREO

or

STEREO

- "ST" indicator lights up and "2 CH DOWNMIX" is scrolled, meaning it enters the 2-CH downmix mode, and then the discrete multi-channels(except LFE) are mixed down into 2 front channels.
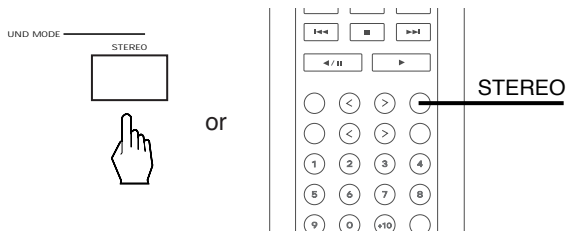
- To cancel the 2 - CH downmix mode, select the desired surround mode with the DSP MODE ◀(<) or ▶(>) button.
- When the playback of the source on the player is stopped, interrupted, etc., the 2 - CH downmix mode is not canceled even though " ST" and the DTS or Dolby Digital indicators go off.
- If headphones are plugged in and the SPEAKER button is set to off while the digital signals from the DTS or Dolby Digital program sources are being input, it will enter the 2-CH downmix mode automatically and if the headphones are unplugged and the SPEAKER button is set to on in the 2-CH downmix mode, it will return to the previous mode.

31

LISTENING TO RADIO BROADCASTS

Auto tuning

1 Select the tuner.

INPUT SELECTOR
AUDIO

or

TUNER

2 Select the desired band.

BAND

FM 87.50 MHz

BAND   FREQUENCY
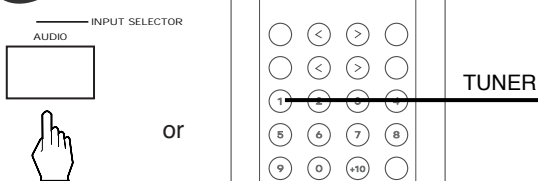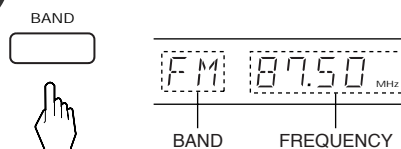
• Each time this button is pressed, the band is changed to FM or AM.
• When pressing the BAND button without selecting the TUNER, the tuner will be selected automatically.

3 Select the tuning mode.

T/P MODE
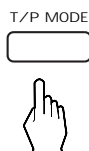
• Each time this button is pressed, the mode changes as follows;

→ Tuning mode : "PRESET" goes off. ⌐
└ Preset mode : "PRESET" lights up. ←

4 Press the TUNING(/PRESET) UP(▲/+) or DOWN(▼/-) button for more than 0.5 second.

▼ TUNING/PRESET ▲

or
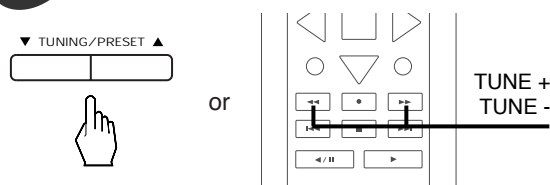
TUNE +
TUNE -

• The tuner will now search until a station of sufficient strength has been found. The display shows the tuned frequency and "TUNED".
• If the station found is not the desired one, simply repeat this operation.
• Weak stations are skipped during auto tuning.
• When pressing the TUNE +/- buttons on the remote control, you need not select the tuning mode on step 3.

Manual tuning

• Manual tuning is useful when you already know the frequency of the desired station.
• Perform the steps 1 to 3 in "Auto tuning" procedure and press the TUNING(/PRESET) UP(▲/+) or DOWN(▼/-) button repeatedly until the right frequency has been reached.

▼ TUNING/PRESET ▲

or
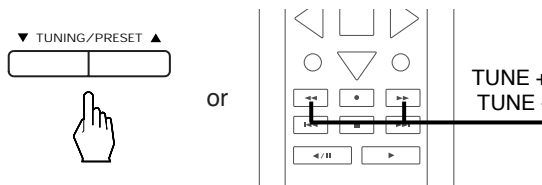
TUNE +
TUNE -

Presetting radio stations

• You can store up to 30 preferred stations in the memory.
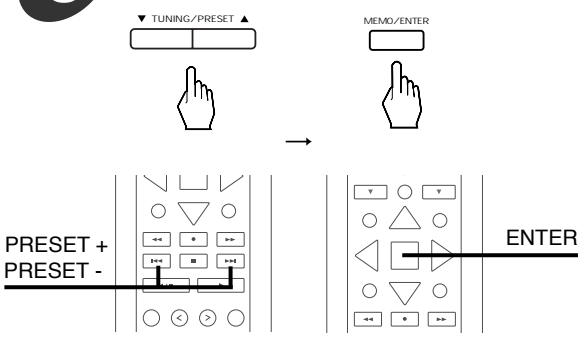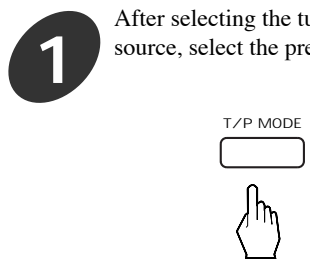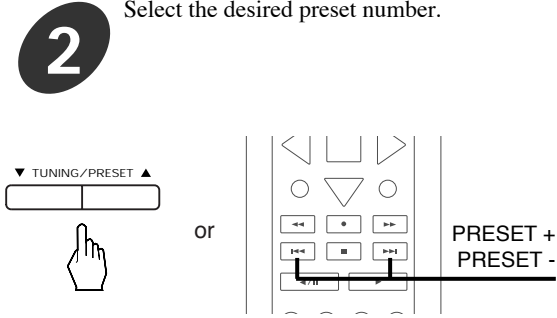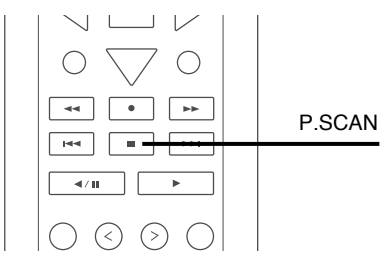
1 Tune in the desired station with auto or manual tuning.

2 Press the MEMORY/ENTER button.

MEMO/ENTER

or

ENTER
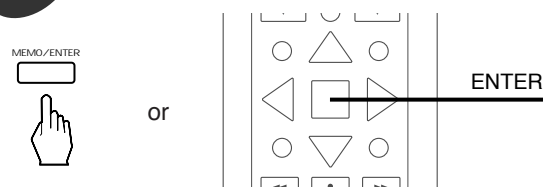
• "MEM" is flickering for 5 seconds.

3 Select the desired preset number (1~30) and press the below button.

▼ TUNING/PRESET ▲   MEMO/ENTER

→

PRESET +
PRESET -   ENTER

- The station has now been stored in the memory.
- A stored frequency is erased from the memory by storing another frequency in its place.
- If "MEM" goes off, start again from the above step 2.

4 Repeat the above steps 1 to 3 to memorize other stations.

■ **MEMORY BACKUP FUNCTION**

The following items, set before the receiver is turned off, are memorized.
- INPUT SELECTOR settings
- Surround mode settings
- Preset stations,etc.

Note : If the electricity fails or the AC input cord is disconnected for more than 2 weeks, they are all cleared. So you should memorize them again.

Tuning to preset stations

1 After selecting the tuner as an input source, select the preset mode.

T/P MODE

- Then "PRESET" lights up.

2 Select the desired preset number.

▼ TUNING/PRESET ▲   or   PRESET +
PRESET -

- When pressing the PRESET +/- buttons on the remote control, you need not select the preset mode on step 1.

Listening to FM stereo broadcasts

- While listening to FM broadcasts.

FM MODE

- Each time this button is pressed, the FM mode changes as follows;

  ┌→ Stereo mode : "ST" lights up. ┐
  └─ Mono mode : "ST" goes off. ←┘

- When FM stereo broadcasts are poor because of weak broadcast signals, select the FM mono mode to reduce the noise, then FM broadcasts are reproduced in monaural sound.

Scanning preset stations in sequence

P.SCAN

- The receiver will start scanning the stations in the preset sequence and each station is received for 5 seconds.
- At the desired station, press this button again to stop scanning.

RECORDING

· The analog signals from the 7 CH DIRECT inputs as well as the digital signals from the coaxial or optical digital input can be heard but cannot be recorded.
· The volume and tone (bass, treble) settings have no effect on the recording signals.

Recording with TAPE

1 Select the desired input as a recording source except for TAPE.

INPUT SELECTOR
AUDIO   VIDEO

or

TUNER
CD
AUX
VIDEO 1
VIDEO 2
VIDEO 3
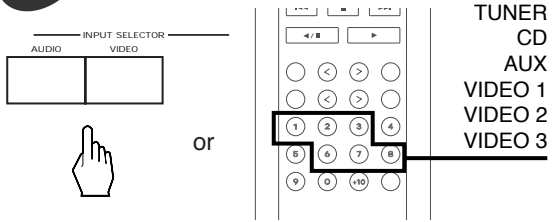
2 Start recording on the TAPE.

3 Start play on the desired input.

Dubbing from video components onto VIDEO 1

1 Select VIDEO 2 or VIDEO 3 as a recording source.

INPUT SELECTOR
VIDEO

or
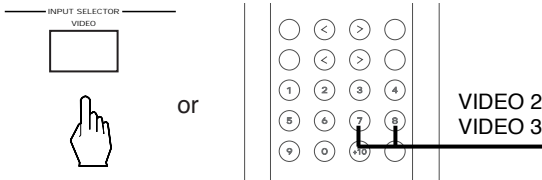
VIDEO 2
VIDEO 3

2 Start recording on the VIDEO 1.

3 Start play on the VIDEO 2 or the VIDEO 3.

• The audio and video signals from the VIDEO 2 or the VIDEO 3 will be dubbed onto the VIDEO 1 and you can enjoy them on the TV set and from the speakers.

Dubbing the audio and video signals separately onto VIDEO 1

Example) When dubbing the VIDEO 2 video signal and the CD audio signal separately onto VIDEO 1.

1 Select VIDEO 2 as a video recording source.

INPUT SELECTOR
VIDEO

or

VIDEO 2
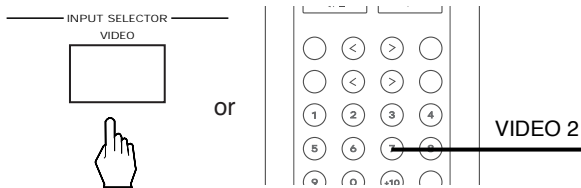
2 Select CD as an audio recording source.

INPUT
AUDIO

or

CD

34

3 Start recording on the VIDEO 1.	**4** Start play on the VIDEO 2 and the CD respectively. • The audio signal from the CD and the video signal from the VIDEO 2 will be dubbed and you can enjoy them on the TV set and from the speakers. Note : Be sure to observe the order of the above steps 1 and 2.

DIGITAL AUDIO RECORDING WITH MD RECORDER

· Only when the OPTICAL DIGITAL OUT of this receiver is connected to the OPTICAL DIGITAL IN of the MD recorder or CD recorder, you can enjoy high-quality sound of digital recording without converting the original signals. Refer to " CONNECTING AUDIO COMPONENTS", "CONNECTING VIDEO COMPONENTS" and "CONNECTING DIGITAL INs and OUT" on pages 6~9 and the operating instructions of the MD recorder or CD recorder.

■ **Notes:**
· Digital recording is available for the digital audio program sources such as CDs, MDs, some DVDs, etc.
· In most DVDs as well as some CDs, etc., digital recording may not be available depending on the signal format.
· There are some restrictions on recording digital signals. When making digital recordings, refer to the operating instructions of your digital recording equipment to know what restrictions are imposed.

1 Select a desired input of CD, VIDEO 1~3 as a recording source. INPUT SELECTOR AUDIO VIDEO or CD VIDEO 1 VIDEO 2 VIDEO 3	**2** For digital recording, select the desired digital input as recording signal input. DIGITAL INPUTS • Each time this button is pressed, the corresponding input is selected as follows: $\rightarrow$ A(nalog) $\rightarrow$ c(oaxial) 1 $\rightarrow$ c(oaxial) 2 $\rightarrow$ o(ptical) 2 $\leftarrow$ o(ptical) 1 $\leftarrow$ ■Note : When the selected digital input is not connected, "DIGITAL" indicator flickers. There will be no recording as well as no sound.
3 Start recording on the component connected to OPTICAL DIGITAL OUT.	**4** Start play on the desired input.

Compressing the dynamic range (Dolby Digital sources only)

• This function compresses the dynamic range of previously specified parts of the Dolby Digital sound track(with extremely high volume) to minimize the difference in volume between the specified and non-specified parts.
  This makes it easy to hear all of the sound track when watching movies at night at low levels.

• When the digital signals from Dolby Digital program source are input in available surround mode.

DYNAMIC RANGE

• Each time this button is pressed, the mode changes and the display scrolls.

  DYNR 0.0 : Off
  ↓
  DYNR 0.5 : Low compression
  ↓
  DYNR 1.0 : High compression

• In some Dolby Digital softwares, this function may not be available.

Operating the sleep timer

• The sleep timer allows the system to continue to operate for a specified period of time before automatically shutting off.

• To set the receiver to automatically turn off after the specified period of time.
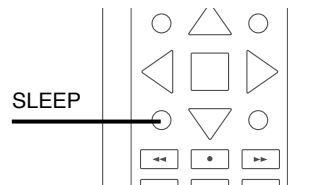
SLEEP

• Each time this button is pressed, the sleep time changes as follows:

  $\rightarrow 10 \rightarrow 20 \rightarrow 30 \rightarrow 60 \rightarrow 90 \rightarrow$ OFF
  Unit : minutes

• While operating the sleep timer, "SLEEP" lights up.

• When the sleep time is selected, all display panels of Sherwood components connected by the DIGI LINK III are dimly lit.

Adjusting the brightness of the fluorescent displays
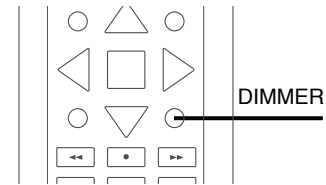
DIMMER

• Each time this button is pressed, the brightness of all fluorescent displays of Sherwood components connected by the DIGI LINK III changes together as follows;

  $\rightarrow$ ON $\rightarrow$ dimmer $\rightarrow$ OFF

• In the display OFF mode, pressing any button will restore the display ON mode.

Using the OSD

This unit incorporates an OSD(On-screen display) function to provide information about basic operation of this unit and to simplify the setup procedures.
The OSD function uses a monitor TV connected to this unit as a display and has two kinds of display modes such as current status display and menu screen.
■ **Notes**: Any on-screen display shown on the monitor TV will not be recorded onto VIDEO 1.

CURRENT STATUS DISPLAY

When the AUTO OSD mode is set to ON on the menu screen, this mode shows the status corresponding to each operation.
・The on-screen display will automatically disappear in several seconds.
・For examples, there are 2 status displays as follows.

■When selecting the desired input source

```
VIDEO 1  (OPTICAL 1)
```

            Input source   Digital input
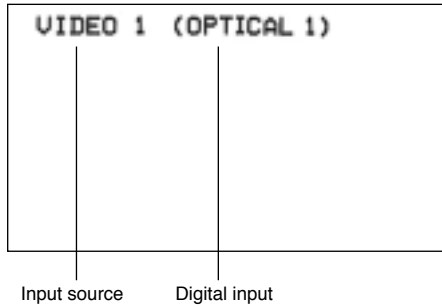
■When selecting the TEST TONE mode

```
 ((+))      +          +
  FL        C          FR
            +
            SW
   +        +          +
  SL        SB         SR

   -           0dB           +
FL  --------◀▶--------   0
```
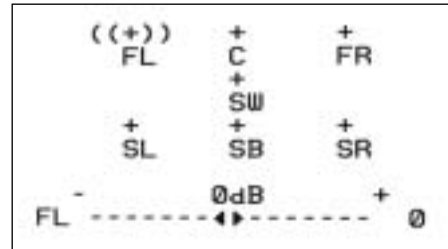
• When the speaker setting is "N", the test tone of the corresponding channel is not shown.
• When adjusting each channel level or overall volume, the volume level display will be shown.
• The test tone display will be shown until the test tone mode is canceled.

MENU SCREEN

・This function simplifies the setup procedures.
・The menu screen operation is performed easily with the CURSOR control(▲, ▼, ◄, ►), OSD and ENTER buttons.

1 Turn the menu screen on.

OSD

• The main menu will be shown.
• To turn the menu screen off, press this button.

```
         MAIN MENU

▶SPEAKER SETUP
 FUNCTION SELECT
 SURROUND MODE
 CH LEVEL TRIM
 AUTO OSD : ON

▲▼:MOVE
OSD:END          ENTER:SEL.
```

2 Select the desired menu using the
CURSOR UP(▲) or DOWN(▼) button.

CURSOR
UP,DOWN
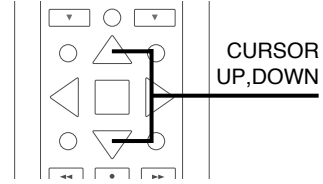
3 Confirm your selection.

ENTER
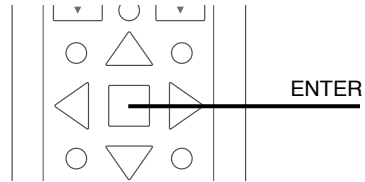
■ When selecting the SPEAKER SETUP

```
      SPEAKER SETUP 1/2

  ▶SUBWOOFER - YES
   FRONT   -   LARGE
   CENTER  -   LARGE
   SURR    -   LARGE
   SURR B  -   LARGE
  ▲▼:MOVE        ◀▶:CHANGE
  OSD:BACK       ENTER:MEM
```

⟺

```
      SPEAKER SETUP 2/2

  ▶FRONT DISTANCE    :   10ft
   CENTER DISTANCE   :   10ft
   SURROUND DISTANCE:     5ft
   SURR B DISTANCE   :     5ft
   CROSSOVER FREQ :   80 Hz
   V.S.ANGLE   :   NARROW
  ▲▼:MOVE        ◀▶:CHANGE
  OSD:BACK       ENTER:MEM
```
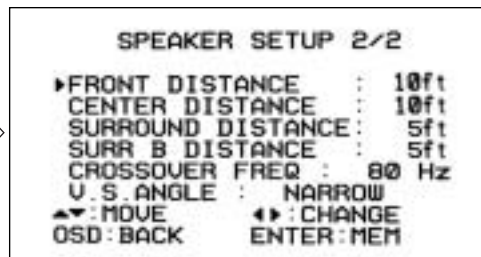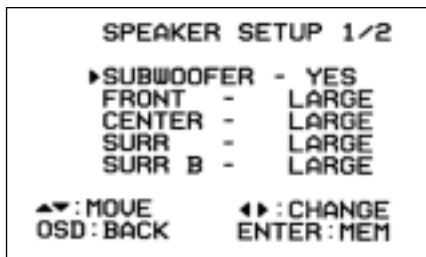
■ When selecting the FUNCTION SELECT

```
      FUNCTION SELECT

  ▶DIGITAL INPUT
   VIDEO SELECT
   TONE CONTROL


  ▲▼:MOVE
  OSD:BACK       ENTER:SEL.
```
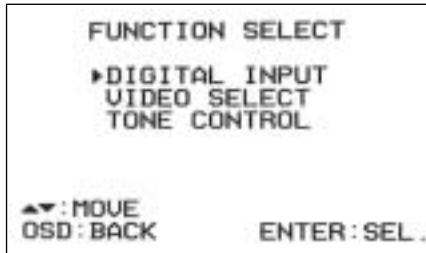
■ When selecting the SURROUND MODE

```
      SURROUND MODE

  ▶PLII MOVIE
   DOLBY VIRTUAL
   NEO:6
   SFE
   STEREO
                  ◀▶:CHANGE
  OSD:BACK        ▲▼:MOVE
```
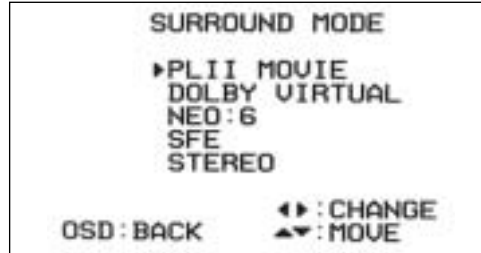
• Only when one of TUNER, CD, TAPE and AUX is selected, you can select a video input source on the
VIDEO SELECT menu and enjoy the audio and video signals separately. (In case of selecting TUNER, you
cannot enjoy component video signals)
• When dubbing them onto VIDEO 1, select either VIDEO 2 or VIDEO 3 on the VIDEO SELECT menu.

■ When selecting the CH LEVEL TRIM

```
    CH LEVEL TRIM 1/2
  ▶REF. 1
   FL  --------◀▶--------   0
   C   --------◀▶--------   0
   FR  --------◀▶--------   0
   SR  --------◀▶--------   0
   SB  --------◀▶--------   0
   SL  --------◀▶--------   0
  ▲▼:MOVE        ◀▶:CHANGE
  OSD:BACK       ENTER:MEM
```

⟺

```
    CH LEVEL TRIM 2/2

  ▶SW  --------◀▶--------   0
   DD L ------◀▶            0
   DTS L-----◀▶             0



  ▲▼:MOVE        ◀▶:CHANGE
  OSD:BACK       ENTER:MEM
```
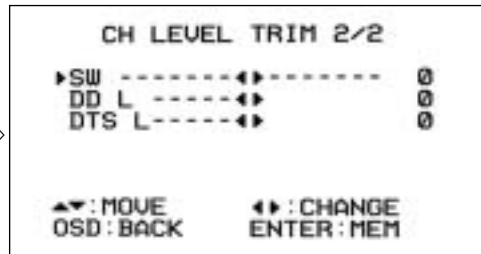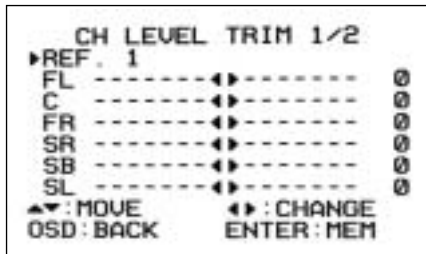
• According to your selections for the input source, input signal, decoding mode, surround mode,
speaker settings, etc., the conditions of each menu may differ.
• When adjusting the distance or channel level, etc., use the CURSOR LEFT(◀) and RIGHT(▶)
buttons.

■When selecting the AUTO OSD
• Each time the ENTER button is pressed, the AUTO OSD mode is set to ON to turn on the current display or
  OFF to turn it off.
• When the AUTO OSD mode is set to ON, the current status display overlays the program image on the monitor
  TV and may interference with your movie enjoyment. In such a case, set it to OFF.

4 Select the desired menu or(and) change the condition with the corresponding buttons.

5 Repeat the above steps 2~4 to change the conditions on other menus.

Troubleshooting Guide

If a fault occurs, run through the table below before taking your receiver for repair.
If the fault persists, attempt to solve it by switching the receiver off and on again. If this fails to resolve the situation, consult your dealer. Under no circumstances should you attempt to repair the receiver yourself. This could void the warranty.

PROBLEM	POSSIBLE CAUSE	REMEDY
No power	・The AC input cord is disconnected. ・Poor connection at AC wall outlet or the outlet is inactive.	・Connect the cord securely. ・Check the outlet using a lamp or another appliance.
No sound	・The speaker cords are disconnected. ・The master volume is adjusted too low. ・The MUTE button on the remote control is pressed to ON. ・Speakers are not switched on. ・Incorrect selection of the input source. ・Incorrect connections between the components.	・Check the speaker connections. ・Adjust the master volume. ・Press the MUTE button to cancel the muting effect. ・Press the SPEAKER button to ON. ・Select the desired input source correctly. ・Make connections correctly.
No sound from the surround speakers	・Surround mode is switched off(stereo mode). ・Master volume and surround level are too low. ・A monaural source is used. ・Surround speaker setting is "N".	・Select a surround mode. ・Adjust master volume and surround level. ・Select a stereo or surround source. ・Select the desired surround speaker setting.
No sound from the center speaker	・Dolby Virtual, stereo mode, etc. is selected. ・Center speaker setting is "N". ・Master volume and center level are too low.	・Select the desired surround. ・Select the desired center speaker setting. ・Adjust master volume and center level.
No sound from the surround back speaker	・The input signal format or the current surround mode cannot support the 6.1 surround playback. ・Master volume and surround back level are too low. ・Surround back speaker setting is "N".	・Under the proper situations, perform the 6.1 surround playback. ・Adjust master volume and surround back level. ・Select the desired surround back speaker setting.
Stations cannot be received	・No antenna is connected. ・The desired station frequency is not tuned in. ・The antenna is in wrong position.	・Connect an antenna. ・Tune in the desired station frequency. ・Move the antenna and retry tuning.
Preset stations cannot be received	・An incorrect station frequency has been memorized. ・The memorized stations are cleared.	・Memorize the correct station frequency. ・Memorize the stations again.
Poor FM reception	・No antenna is connected. ・The antenna is not positioned for the best reception.	・Connect an antenna. ・Change the position of the antenna.
Continuous hissing noise during FM reception, especially when a stereo broadcast is received.	・Weak signals.	・Change the position of the antenna. ・Install an outdoor antenna.
Continuous or intermittent hissing noise during AM reception, especially at night.	・Noise is caused by motors, fluorescent lamps or lightning, etc.	・Keep the receiver away from noise sources. ・Install an outdoor AM antenna.
Remote control unit does not operate.	・Batteries are not loaded or exhausted. ・The remote sensor is obstructed.	・Replace the batteries. ・Remove the obstacle.
Other Sherwood components do not react to remote control commands.	・DIGI LINK connections are not made properly.	・Make proper DIGI LINK connections.
OSD function is not available	・Video connections between this unit and the TV monitor are not made correctly.	・Make proper video connections.

Specifications

■AMPLIFIER SECTION

- Power output, stereo mode, 6 Ω, THD 0.2 %, 40 Hz~20 kHz
  ☞ **2 × 100 W**
- Total harmonic distortion, 6 Ω, 95 W, 1 kHz ☞ **0.09%**
- Intermodulation distortion
  60 Hz : 7 kHz= 4 : 1 SMPTE, 6 Ω, 95 W ☞ **0.1%**
- Input sensitivity, 47 kΩ
  Line (CD, TAPE, VIDEO) ☞ **200 mV**
- Signal to noise ratio, IHF "A" weighted
  Line (CD, TAPE, VIDEO) ☞ **90 dB**
- Frequency response
  Line (CD, TAPE, VIDEO), 20 Hz~50 kHz ☞ **+0 dB, -3 dB**
- Output level
  TAPE REC, 2.2 kΩ ☞ **200 mV**
- Bass/Treble control, 100 Hz/10 kHz ☞ **±10 dB**
- Surround mode, only channel driven
  Front power output, 6 Ω, 1 kHz, THD 0.7 % ☞ **110 W+110 W**
  Center power output, 6 Ω, 1 kHz, THD 0.7 % ☞ **110 W**
  Surround power output, 6 Ω, 1 kHz, THD 0.7 % ☞ **110 W+110 W**
  Surround back power output, 6 Ω, 1 kHz, THD 0.7 % ☞ **110 W**

■DIGITAL AUDIO SECTION

- Sampling frequency ☞ **32, 44.1, 48, 96 kHz**
- Digital input level
  Coaxial, 75 Ω ☞ **0.5 Vp-p**
  Optical, 660 nm ☞ **-15~-21 dBm**

■VIDEO SECTION

- Video format ☞ **NTSC**
- Input sensitivity(=Output level), 75 Ω
  Video (Composite(normal)) ☞ **1 Vp-p**
  S-Video (luminance signal) ☞ **1 Vp-p**
  (chrominance signal) ☞ **0.286 Vp-p**
  Component video (R-Y signal) ☞ **0.5 Vp-p**
  (B-Y signal) ☞ **0.5 Vp-p**
  (Y signal) ☞ **1.0 Vp-p**

■FM TUNER SECTION

- Tuning frequency range ☞ **87.5~108 MHz**
- Usable sensitivity, THD 3%, S/N 30 dB ☞ **12.8 dBf**
- 50 dB quieting sensitivity, mono/stereo ☞ **20.2/45.3 dBf**
- Signal to noise ratio, 65 dBf, mono/stereo ☞ **70/65 dB**
- Total harmonic distortion, 65 dBf,1 kHz, mono/stereo
  ☞ **0.5 / 0.8 %**
- Frequency response, 30 Hz~15 kHz ☞ **±3 dB**
- Stereo separation, 1 kHz ☞ **32 dB**
- Capture ratio ☞ **4 dB**
- IF rejection ratio ☞ **60 dB**

■AM TUNER SECTION

- Tuning frequency range ☞ **520~1710 kHz**
- Usable sensitivity ☞ **500 μV/m**
- Signal to noise ratio ☞ **40 dB**
- Selectivity ☞ **25 dB**

■GENERAL

- Power supply ☞ **120 V ~ 60 Hz**
- Power consumption ☞ **2.5 A**
- Switched AC outlet ☞ **TOTAL 100 W max.**
- Dimensions (W × H × D) ☞ **17-3/8 × 5-1/2 × 13 inches**
  (440 × 141 × 330 mm)
- Weight (Net) ☞ **9.9 kg (21.8 lbs)**

Note: Design and specifications are subject to change without notice
for improvements.

Setup Code Table

TV

AOC	005	003					Goldstar	005	025	003	011		
Admiral	041	031					Gradiente	009	011				
Aiko	014						Grunpy	027	026				
Akai	005						Hallmark	025					
Alaron	026						Harley Davidson	026					
Ambassador	024						Harman/Kardon	010					
America Action	027						Havard	027					
Ampro	043						Hitachi	016	011	018			
Anam	027	047	048	049			Infinity	010					
Audiovox	030	027	014	034			Inteq	002					
Baysonic	027						JBL	010					
Belcor	003						JCB	050					
Bell & Howell	019	001					JVC	009	046				
Bradford	027						KEC	027					
Brockwood	003						KTV	027	005	006			
Broksonic	028	031					Kenwood	005	003				
CXC	027						LG	011	003				
Candle	005	011					LXI	007	010	019	020	025	
Carnivale	005						Logik	001					
Carver	010						Luxman	011					
Celebrity	050						MGA	017	005	025	003		
Cineral	030	014					MTC	012	005	003	011		
Citizen	012	005	011	006	014		Magnavox	010	005	026			
Concerto	011						Magestic	001					
Contec	027						Marantz	010	005				
Craig	027						Matsushita	042					
Crosley	010						Magatron	025	016				
Crown	027	006					Memorex	019	042	031	017	025	011
Curtis Mathes	007	010	019	008	030	041		001					
	012	005	016	011	001	006	Midland	007	002	008	006	015	
	022	032	038	040			Minutz	004					
Daewoo	030	003	006	014	034	035	Mitsubishi	041	017	025	003		
Daytron	003						Motorola	041					
Denon	016						Multitech	027					
Dumont	002	003					NAD	020	025	022			
Dwin	044	036					NEC	005	003	011			
Electroband	050						NTC	014					
Emerson	019	028	031	027	029	025	Nikko	005	025	014			
	003	026	006	024	034	035	Onwa	027					
Envision	005						Optimus	019	042	022			
Fisher	019						Optonica	041	021				
Fujitsu	026						Orion	028	031	026			
Funai	027	026	023				Panasonic	008	042				
Futuretech	027						Penney	007	020	008	012	005	025
GE	007	008	030	041	029	025		004	003	011	006	015	040
	004	015	038	040			Pilco	010	031	005	016	003	
Gibralter	002	005	003				Philips	010					

42

Pilot	005	003	006			
Pioneer	022					
Portland	003	006	014			
Prism	008					
Proscan	007					
Proton	025	032				
Pulsar	002	003				
Quasar	008	042	021			
RCA	007	008	041	003	013	015
	037	038	039	040		
Radio Shack	007	019	021	027	005	025
	003	011	006			
Realistic	019	021	027	005	025	003
	011	006				
Runco	002	005	033			
SSS	027	003				
Sampo	005	006				
Samsung	012	005	025	003	011	045
Samsux	006					
Sansei	030					
Sansui	031					
Sanyo	019					
Scimitsu	003					
Scotch	025					
Scott	028	027	025	003	026	
Sears	007	010	019	020	025	026
	011	006				
Semivox	027					
Semp	020					
Sharp	041	021	006			
Sherwood	000					
Shogun	003					
Signature	001					
Sony	050					
Soundesign	027	025	026			
Squareview	023					
Starlite	027					
Supreme	050					
Sylvania	010	005				
Symphonic	023					
TMK	025	011	024			
Tandy	041					
Technics	008	042				
Technoi Ace	026					
Techwood	008	011				
Teknika	010	027	017	012	003	026
	011	001	006	014		
Telefunken	011					
Toshiba	019	020	012			
Totevision	006					
Vector Research	005					
Victor	009					
Vidikron	010					

Vidtech	025	003				
Wards	010	021	005	025	004	003
	026	011	001			
White Westinghouse	031	034	035			
Yamaha	005	003				
Zenith	002	031	001	014		

VCR

Admiral	027	021				
Adventura	000					
Aiko	025					
Aiwa	005	000				
Akai	026					
America Action	025					
America High	004					
Asha	023					
Audiovox	005					
Beaumark	023					
Bell & Howell	017					
Brocksonic	021					
Broksonic	020	018	021	001		
CCE	015	025				
Calix	005					
Canon	004					
Carver	081					
Cineral	025					
Citizen	005	025				
Colt	015					
Craig	005	012	023	015	024	
Curtis Mathes	013	004	026	028		
Cybernex	023					
Daewoo	010	025				
Denon	008					
Dynatech	000					
Electrohome	005					
Electrophonic	005					
Emerex	002					
Emerson	005	020	000	018	009	021
	001	025				
Fisher	012	017				
Fuji	004	003				
Funai	000					
GE	013	004	027	023		
Garrard	000					
Go Video	052					
GoldStar	005	006				
Gradiente	000					
HI-Q	012					
Harley Davidson	000					
Harman/Kardon	016	006				
Harwood	015					

Brand	Codes					
Headquarter	011					
Hitachi	000	008	026			
Hughes Net.Sys	008					
JVC	014	026				
Jensen	026					
KEC	005	025				
KLH	015					
Kenwood	014	026	006			
Kodak	004	005				
LXI	005					
Lloyd's	000					
Logik	015					
MEI	004					
MGA	023	009				
MGN Technology	023					
MTC	023	000				
Magnasonic	025					
Magnavox	004	007	016	000	019	
Magnin	023					
Marantz	004	016				
Marta	005					
Matsushita	004	028	029			
Memorex	004	005	027	007	012	023
	000	017	021	011	031	032
Minolta	008					
Mitsubishi	027	014	009			
Motorola	004	027				
Multitech	000	015				
NEC	017	014	026	006		
Nikko	005					
Noblex	023					
Olympus	004					
Opimus	005	027	017	028	029	030
	031	032				
Orion	020	021	001			
Panasonic	004	028	022	029	031	
Penny	004	005	023	008	006	
Pentax	008					
Philco	004	021				
Philips	004	016				
Pilot	005					
Pioneer	014					
Profitronic	023					
Proscan	013					
Protec	015					
Pulsar	007					
Quarter	011					
Quartz	011					
Quasar	004	028	029	031		
RCA	013	004	027	023	008	019
Radio Shack	000					
Radix	005					
Randex	005					

Brand	Codes					
Realistic	004	005	027	012	000	017
	011					
Runco	007					
STS	008					
Samsung	023	010	033			
Sanky	027	007				
Sansui	000	014	021	026	024	
Sanyo	012	023	017	011		
Scott	020	010	018	009		
Sears	004	005	012	000	008	017
	011					
Semp	010					
Sharp	027					
Shintom	015					
Shogun	023					
Singer	015					
Sony	004	002	000	003		
Syvania	004	016	000	009		
Symphonic	000					
TMK	023					
Tatung	026					
Teac	000	026				
Technics	004	028				
Teknika	004	005	000			
Thomas	000					
Toshiba	010	009				
Totevision	005	023				
Unitech	023					
Vector	010					
Vector Research	006					
Video Concepts	010					
Videosonic	023					
Wards	013	004	027	012	016	023
	000	008	015	019		
White WestingHouse	021	025				
XR-100	004	000	015			
Yamaha	006					
Zenith	007	000	021	003		
Ameira High	004 (TV use 008)					
Brocksonic	001					
Colt	015					
Cutis Mathes	004 (TV use 008)					
Daewoo	025					
Emerson	001					
Funai	000					
GE	004 (TV use 008)	013 (TV use 012)				
	027 (TV use 041)	023				
Hitachi	004 (TV use 008)	000				
HQ	000					
Lloyds	000					
MGA	023					
Megavox	016 (TV use 010)	004 (TV use 008)				
	000					

Magnin	023
Memorex	005 028 (TV use 025)
Mitsubishi	027 (TV use 041)
Orion	001
Panasonic	004 (TV use 008) 028 (TV use 042)
Penney	004 (TV use 008) 023
	028 (TV use 042)
Quasar	004 (TV use 008) 028 (TV use 042)
RCA	013 (TV use 012) 004 (TV use 008)
	027 (TV use 041)
Sansui	000
Sanyo	023
Sear	000 005
Sharp	027 (TV use 041)
Sony	002 (TV use 000)
Symphonic	000
Zenith	000

DVD

Harman/Kardon	009
JVC	008
Kenwood	005
Megavox	011
Mitsubishi	016
Onkyo	011
Panasonic	013
Philips	011 006
Pioneer	003 014 026
Proscan	002
RCA	002
Samsung	017
Sherwood	001 012 000 018 019
	020 021 022 023 025
Sony	004
Technics	013
Theta Digital	014
Toshiba	011
Yamaha	013 007
Zenith	011 010

CBL

ABC	002	003	009	030	
	007	006	008		
Allegro	018	021			
Archer	018	026			
Bell&Howell	009				
Century	018				
Citizen	018	021			
Comtronics	014				
Contec	011				
Easten	001				
Emerson	026				
Everquest	010	014			
Focus	022				
Garrard	018				
Gemini	010				
General Instrument	033	276	006	034	
GoldStar	017	040			
Goodmind	026				
Hamlin	012	020	004	013	
Hitachi	006				
Hytex	007				
Jasco	010	018	021		
Jerrold	002	007	033	032	009 010
	006	034			
Memolex	000				
Movie Time	015				
NSC	015				
Oak	011				
Optimus	031				
Panasonic	000	016	031		
Paragon	000				
Philips	018				
Pioneer	017	025			
Popular Mechanics	022				
Pulsar	000				
Quasar	000				
RCA	031				
Radio Shack	010	021	026	028	
Recoton	022				
Regal	012	020			
Regency	001				
Rembrandt	006				
Runco	000				
SL Marx	014				
Smasung	017	014			
Scientific Atlanta	003	023	030	027	
Signal	010	014			
Signature	006				
Sprucer	031				
Starcom	002	010			

Stargate	010	014	026
Starquest	010		
TV86	015		
Teleview	014		
Tocom	007	008	
Toshiba	000		
Tusa	010		
Unika	018		
United Artists	007		
Universal	153	019	
Viewstar	015		
Zenith	000	024	
Zentek	022		

SAT

AlphaStar	008			
Chaparral	001			
Echostar	009			
Expreevu	009			
General Instrument	016	015	018	
HTS	009			
Hitachi	011			
Hughes Net.Sys	007			
JVC	009			
Jerrold	016	015		
Megavox	006	005		
Memorex	006			
Next Level	006			
Panasonic	017			
Philips	006	005		
Primestar	016	015		
RCA	003	000	002	012
Radio Shack	018			
Realistic	014			
Sony	004			
Star Choice	018			
Toshiba	010			
Uniden	006	005	014	
Zenith	013			

AUX-TAPE/MD

Sherwood	000 (for tape deck)
	035 (for MD recorder)

AUX-LD

Denon	007	
Mitsubishi	007	
NAD	007	
Pioneer	007	
Sony	017	018

AUX-TAPE

Aiwa	004	034	
Carver	004		
Harman/Kardon	016	004	
JVC	022	024	
Kenwood	008		
Megavox	004		
Marantz	004		
Onkyo	012	025	
Opimus	002	020	
Panasonic	038		
Pioneer	002	020	011
Sansui	004		
Sony	021	014	026
Technics	038		
Victor	024		
Wards	002		
Yamaha	010	009	

AUX-AMP

Awia	029	
Carver	023	
Curtis Mathes	027	
Denon	037	
Harman/Kardon	040	
Linn	023	
Megavox	023	
Marantz	023	
Panasonic	039	
Philips	023	040
Pioneer	003	027
Sony	019	033
Technics	039	
Wards	003	
Yamaha	028	

AUX-HOME AUTOMATION

GE	043
Lutron	044
One For All	042
Radio Shack	043
Security System	042
Universal X10	042
X10	042

AUX-DBS

Awia	045	059	029
Fisher	005		
Harman/Kardon	046		
JBL	046		
JVC	047		
Jerrold	031		
RCA	006		
Scientific Artlanta	032		
Sony	045		
Starcom	031		

AUX-ACCESSORY

Archer	013
GC Electronics	013
Jebsee	013
Rabbit	036
Radio Shack	013

CD

Awia	010	030	
Burmester	019		
California Audio Lab	002		
Carver	010	012	020
DKK	001		
Denon	028	034	
Emerson	035		
Fisher	012	033	
Garrard	019	018	
Genexxa	004	035	
Harman/Kardon	010	011	
Hitachi	004		
JVC	007		

Kenwood	003	029	016	024	025
Krell	010				
LXI	035				
Linn	010				
MCS	002				
MTC	019				
Megavox	010	035			
Marantz	002	010	013		
Mission	010				
NSM	010				
Nikko	033				
Onkyo	008	026			
Opimus	001	004	012	035	029
	019	009	021	020	
Panasonic	002	031			
Parasound	019				
Philips	010	023			
Pioneer	004	035	021	017	
Proton	010				
QED	010				
Quasar	002				
RCA	012	035	006	036	
Realistic	012	019	013		
Rotel	010	019			
SAE	010				
Sansui	010	035			
Sanyo	012				
Scott	035				
Sears	035				
Sharp	029	013	037		
Sherwood	013	027	038	039	040	041
	000				
Sony	001	014	022		
Soundesign	009				
Tascam	019				
Teac	019	018	033	013	
Technics	002	031			
Victor	007				
Wards	010	006			
Yamaha	005	015			
Yorx	032				

R-765
A/V RECEIVER

Sherwood
NEWCASTLE